Sir Fojio Rayal 1817

MEDICAL COMMENTARIES,

FOR THE YEAR M,DCC,LXXXVII.

EXHIBITING A CONCISE VIEW OF THE LATEST AND MOST IMPORTANT DISCOVERIES IN MEDICINE AND MEDICAL PHILOSOPHY.

COLLECTED AND PUBLISHED BY

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Neglecta reducit, sparsa colligit, utilia selegit, necessaria ostendit, sic utile.
Baglivius.

DECADE SECOND.

VOL. II.

EDINBURGH:
PRINTED FOR C. ELLIOT, T. KAY, AND Co. at Dr Cullen's Head, N° 332, opposite Somerset-Place, Strand, LONDON;
AND FOR C. ELLIOT, EDINBURGH.

M,DCC,LXXXVIII.

TO

GEORGE DEMPSTER, Esq.

Of DUNNICHEN;

Whofe conduct in the Britifh Senate,

For more than twenty years,

Has been uniformly diftinguifhed

By a fincere, fteady, and active, attachment

To the intereft of his Country:

This Volume

Is refpectfully infcribed,

As a flight teftimony of the high efteem

Of his ever grateful

And moft obedient fervant,

ANDREW DUNCAN.

PREFACE.

WITH our annual publication for laſt year, we began a new ſeries of volumes; and we expreſſed a hope, that, during the courſe of our ſecond Decade, a volume would regularly appear every year by the firſt of January. It gives us ſome ſatisfaction to think, that, on the preſent occaſion, at leaſt, we are able, in this particular, to fulfil our engagements to the public; and we truſt, that, as far as the publication depends upon ourſelves, the ſame regularity will hereafter be continued.

We are, however, fully ſenſible, that regularity, in a publication of this nature, is but a ſecondary object, and of much leſs conſequence to the reader, than a due degree of care in ſelecting the materials of which it is compoſed. In this particular, however, we truſt that the preſent volume will not be thought unworthy of the attention of thoſe who are ſenſible of the imperfections of medicine, and ardently wiſh for its improvement.

In the firſt part of the preſent volume, from a vaſt ſtock of materials, we have beſtowed no inconſiderable attention in ſelecting what to us appeared to be the moſt important. And whether thoſe of extenſive reading may altogether applaud our ſelection or not, we truſt that to thoſe ſituated in leſs favourable circumſtances the peruſal of our work will be no leſs agreeable than uſeful. We are happy to find, that the alteration we have made in our plan, by not confining ourſelves to a mere analyſis of new books, but by candidly offering our opinion of their contents, when we are able to give a judgment as the reſult of experience, has met with the approbation of ſome of our moſt valuable correſpondents. And we truſt that thoſe criticiſms which are contained in the preſent volume, neither ſhow a want of due deference to the aſſertions of others, nor inattention to facts.

For the ſecond ſection of the preſent volume, our readers will obſerve, that we owe a public acknowledgment of thanks, not only to Britiſh practitioners both at home and abroad, but alſo to a diſtinguiſhed foreigner. And

And we truſt, that our having communicated his important obſervation to the public in his own words, will not be conſidered as any deviation from our original plan, or inconſiſtent with a work, which, although principally written in Engliſh, cannot be entirely confined to that language.

We truſt that many arguments are not now neceſſary for ſoliciting the aid of accurate obſervers to our future volumes. There are few who do not frequently meet with occurrences in actual practice which convey uſeful information to themſelves; and when they reflect that theſe may communicate ſimilar inſtruction to others, they can hardly conſider themſelves as altogether excuſable in witholding them from the public: and we muſt conſider ourſelves as particularly indebted to thoſe who make this work the channel of public information. Our correſpondents may reſt aſſured, that where their obſervations appear to us worthy of attention, they ſhall not be long with-held from the public; and, unleſs where ſome particular reaſon prevents it, every obſervation tranſmit-

ted to us by the firft of Auguft, will appear in the volume immediately fucceeding.

The fection of medical news in our prefent volume has extended to a greater length than in moft of the former ones. But we truft, that while it affords the gratification of rational curiofity, it contains alfo many articles of important information, both in medicine and medical philofophy. To thofe who have directed their thoughts to the caufe of heat, a fubject which has of late engaged the attention of almoft every philofopher in Europe, we flatter ourfelves, that the laft article of this fection will afford an ample field for future and for interefting fpeculation.

EDIN. Dec. 1.
1787.

N. B. Thofe gentlemen who mean to favour us with any communications for our fucceeding volume, will be pleafed to tranfmit them to Dr Duncan, either at Edinburgh, or to the care of Meffrs Elliot and Co. Bookfellers, oppofite to Somerfet-Place, Strand, London.

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MEDICAL

MEDICAL COMMENTARIES, FOR THE YEAR 1787.

VOL. II. DECADE II.

SECT. I.

Account of New Books.

I.

Observations on the Diseases incident to Seamen. By Gilbert Blane, *M. D. F. R. S. Physician Extraordinary to the Prince of Wales, Physician to St Thomas's Hospital, and Physician to the Fleet in the late War.* 8vo, London.

WE are informed in the preface to this work, that the author was appointed physician to the fleet under the command of

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Lord Rodney in the beginning of the year 1780. This fleet feldom confifted of lefs than twenty fhips of the line, and fometimes exceeded forty. Thus he had extenfive opportunities of obfervation, in attending the fick both on board the different fhips and at the different hofpitals connected with the fleet. By order of the commander in chief, monthly returns were made to him of the ftate of the health of the men in each fhip, that he might be better able to regulate the hofpitals, and to recommend the proper means for promoting health in the fleet. Hence he had an opportunity of treading an almoft unbeaten field, at leaft with refpect to the extent of his obfervations. And in the work before us, he has prefented his readers with faithful abftracts of the different returns made to him; which may, we apprehend, be confidered as the moft extenfive collection of facts yet extant, for illuftrating the medical hiftory of the naval fervice, and for afcertaining the caufes and courfe of difeafe in that fituation.

Dr Blane juftly obferves, that in order to eftablifh practical maxims in phyfic, reliance fhould never be put upon a few cafes. Deductions

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ductions from theſe will very generally be found to be inconcluſive, if not fallacious; and they are apt to be turned and gloſſed according as the mind of the obſerver may be biaſſed by any favourite prepoſſeſſion or hypotheſis. It has, he aſſures us, been his ſtudy to exhibit a rigid tranſcript of truth and nature on a large ſcale, and to draw his concluſions only from a very great number of facts. Theſe facts he has endeavoured to analyſe and collate, by throwing the monthly returns into the form of tables, as the moſt certain and compendious way of finding their reſult. It is certainly much to be regretted, that no attempts have hitherto been made to tranſmit to poſterity regular records of this kind. And the preſent eſſay, as laying a foundation on the ſolid ground of experience, for aſcertaining the means of preventing and removing the diſeaſes of ſeamen, may juſtly be conſidered as meriting peculiar attention.

The work before us is divided into three parts. In the firſt, we are preſented with the medical hiſtory of the different voyages and expeditions in which the author was concerned: an accurate account being given of the

nature of the diseases which prevailed during these, and of the mortality which took place both on board the ships and in the hospitals. In the second part, our author endeavours to deduce from these facts, taken in conjunction with what had before been inferred from the experience of others, the causes by which diseases are chiefly introduced into fleets, and the means by which they may be most effectually prevented. And, in the last part, he presents us with a detail of that practice which was found to be most successful in combating those diseases to which fleets are chiefly exposed, particularly in warm climates.

The first of these parts is divided into three books. In the first, Dr Blane gives the medical history of the fleet from March 1780 till August 1781. During that time, the fleet was in the West Indies, excepting in autumn, when the greatest part of it went to the coast of America, to avoid the hurricanes incident to those regions at that season. In this book the author presents us with several interesting remarks on the effects produced on health, by change of climate, by differences of diet, of cloathing, and of discipline. He observes, that

that the air at ſea is much more healthy than that at land; that in circumſtances very ſimilar, the mortality in the army is much greater than in the fleet; and that in a warm climate, ſickneſs is more frequently induced in a fleet, from land-winds when in harbour, or from the intercourſe which the men have with the ſhore, than from any other cauſe. During this period, there were ſeveral engagements with the enemy: But though theſe were productive of hardſhips and expoſure, yet they did not, he obſerves, tend to increaſe the ſickneſs. This he attributes partly to the warmth and purity of the air at ſea, and partly to the effects of battle upon the ſpirits of the men.

Dr Blane makes ſome general remarks on the climate of the Weſt Indies. He obſerves, that there the thermometer ſhows but a ſmall range of variation in the temperature; that at ſea, in the cool ſeaſon it varies only from 69 to 79 degrees, and in the hot ſeaſon from 76 to 83 degrees; and that, on ſhore, it ſeldom riſes higher than 87 degrees in the ſhade. Here alſo there are ſome obſervations on the remarkable hurricane which happened in the Weſt

Indies in October 1780. A fever followed it of the moſt malignant kind known in that climate. But it ſeemed to be principally the conſequence of great fatigue and hardſhips in refitting. For while it was deſtructive to the lives and health of the ſeamen, yet, with regard to the inhabitants on ſhore, it had a ſurpriſing and unexpected effect in mending their health. In the year 1781, after a long cruize to the windward of Martinico, the fleet contracted a degree of ſcurvy which they had never before experienced in the Weſt Indies. They had been for a great length of time confined entirely to ſea-victuals, having hardly had a freſh meal for ſix months. When they got to ſituations where they had a plentiful ſupply of freſh water, although neither freſh meat nor vegetables were to be procured, yet the progreſs of the ſcurvy was retarded; and there occurred ſeveral ſtriking inſtances of the effects of lemons and ſimilar acid fruits, in curing it without any other refreſhments. The number of ſick in the fleet was about this time ſo great that the hoſpitals were incapable of containing them. It became therefore neceſſary to provide the ſick

with

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with all the neceſſary refreſhments on board their own ſhips. This method was found to anſwer ſo well, that Dr Blane was afterwards led to prefer it to ſending the ſick on ſhore to hoſpitals, unleſs where their diſeaſes happened to be of a contagious nature.

In the ſecond book, the medical hiſtory of the fleet is continued from Auguſt 1781 till the concluſion of the war. In October 1781, Dr Blane preſented a memorial to the Admiralty, ſetting forth the principal cauſes of the ſickneſs and mortality in the fleet in which he had ſerved; and propoſing ſuch means for the preſervation of health as had occurred to him during his paſt ſervice. In conſequence of this, ſome additions and alterations were made in the victualing; and theſe ſeemed to have a ſalutary effect. In particular, the Formidable, the ſhip in which he was ſtationed, afforded a ſingular inſtance of the degree of health which may be attained on board a ſhip by proper attention. He obſerves, that about this time the fleet on the home ſtation, as well as that abroad, was remarkably healthy, in ſo much that the hoſpitals at Portſmouth and Plymouth were not more than half filled.

He affigns as the chief caufe of this, the continuance of the war, which had now lafted fo long that the men were habituated to a fea-life. He thinks that one of the principal caufes of ficknefs in the fleets in Europe at the commencement of a war, arifes from the infection which is carried on board fhips newly commiffioned, from jails and guard-fhips where impreffed men are confined. On this occafion, he gives it as his opinion, that there is a tendency in acute difeafes to wear themfelves out, both in the individuals who labour under them, and when infection is introduced into a community. Unlefs, fays he, there was fuch a vis medicatrix, there could be no end to the progrefs and fatality of thefe diftempers. For otherwife the infectious matter would go on multiplying itfelf without end. It would, he thinks, neceffarily deftroy every perfon who might be actually attacked with it, and would infect every perfon who might be expofed to it. That fuch a tendency to decline, or vis medicatrix, may exift, we will not pretend to deny: But its exiftence cannot, we think, with any degree of probability, be inferred from the neceffity here

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here ſuppoſed. For we doubt much whether any one inſtance has ever occurred where the decline of acute diſeaſes could not be referred to ſome other cauſe than a tendency to wear themſelves out. And even Dr Blane himſelf aſſigns it as another reaſon of the ſuperior health of ſhips which have been long in commiſſion, or long in hot climates, that in the courſe of time all the moſt weakly are cut off, and that it is the more hardy only who ſurvive. He obſerves, that the liver complaints, of which ſo many die in the Eaſt Indies, are extremely rare in the Weſt.

It was during this period of Dr Blane's hiſtory that the ever-memorable engagement of the 12th of April 1782 took place. Dr Blane obſerves, that there was leſs ſickneſs, and leſs death from diſeaſe, in this month than in any of the former twenty-three months in which he kept records of the fleet; and alſo leſs than in any of the ſubſequent months till the fleet got to the coaſt of America. He accounts for this by obſerving, that the men had not been expoſed to the noxious air of the ſhore in watering, as in the preceding months; that they had received from England

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land a fresh supply of provisions, among which was some sour kraut, melasses, and essence of malt, all in addition to the ordinary articles of victualing; that many of the ships were supplied with wine in place of rum; and that as the weather was all along dry and fine, the men suffered less than would otherwise have been the case from exposure and want of sleep, which are necessary consequences of keeping the ships clear for battle for several days and nights together. But in addition to all these circumstances, he puts it as a question, whether this extraordinary degree of health might not also in part be owing to the effects of success on the spirits of the men? It is related, he observes, that when the fleet under Admiral Matthews was off Toulon, in daily expectation for some time of engaging the combined fleets of France and Spain, there was a general stop put to the progress of disease, particularly of the scurvy, from that generous flow of spirits with which the prospect of battle inspires British seamen. But, says he, if the mere expectation and ardour of battle, without any happy event, could have such a sensible effect, what must have been

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been the conſequence of the exultation of victory; of a victory in which the naval glory of Britain was revived and retrieved, after a ſeries of misfortunes and diſgraces which had well nigh extinguiſhed the national pride in every department of ſervice? The plain and honeſt, though unthinking, ſeaman, is not, he obſerves, leſs affected by this than the moſt enlightened lover of his country. And even the invalids at the hoſpital demonſtrated their joy, by hoiſting ſhreds of coloured cloth on their crutches.

Dr Blane thinks that there is ſomething in ſituations of exertion and danger which infuſes a ſort of preternatural vigour. When the mind is intereſted and agitated by active and generous affections, the body forgets its wants and feelings, and is capable of a degree of labour and exertion which it could not undergo in cold blood. The quantity of muſcular action, he obſerves, employed in fighting a great gun for a few hours, is more than is employed for a week in the ordinary courſe of life; and although performed in the midſt of heat and ſmoke, and generally with the want of food and drink, yet the powers of nature

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nature are neither exhaufted nor overftrained, and the future health of thofe who furvive unhurt by external violence, is fo far from being injured, that it is fometimes mended by this violent but falutary agitation. The lofs in the action, and the number of mortal wounds, were not fo great as might have been expected in a battle continued for a whole day. This advantage was owing to the fuperiority of our fire, as well as to the clofenefs of the fight, of which the commander in chief fet the illuftrious example, by penetrating the enemy with his own fhip: a bold and fingular effort, which firft decided the fortune of the day. When fhips in action are expofed to each other at a fmall diftance, the velocity of cannon-balls is fo great, that in penetrating a fhip's fide few or no fplinters are torn off: and by thefe more men are commonly killed and wounded than by the ball itfelf. For the fame reafon, a clofe fhot does lefs damage to the fhip itfelf than a diftant one: for a quick flying ball makes an aperture lefs than its own diameter; whereas a fpent one produces innumerable fplinters, at the fame time fhivering the object it ftrikes,

and

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and making wide and extenſive rents in it. The proportion of the wounded to the killed is alſo, our author obſerves, greater in diſtant than in cloſe fight, on account of the greater number of ſmall ſplinters. Of this, he obſerves, an experimental proof is afforded in comparing the action in April 1781 with that in April 1782. In the former, the enemy having kept far to windward, and engaged at a great diſtance, the proportion of the wounded to the killed was conſiderably more than four to one; whereas in the latter, where the greater part of the action was cloſe, the proportion of the wounded to the killed was little more than three to one.

Dr Blane next relates the ſtate of the fleet in point of health while at Jamaica in ſummer 1782. The ſhips of war made prizes from the French proved a great ſource of diſeaſe, in conſequence of their great inferiority in point of cleanlineſs and of diſcipline to the Britiſh ſhips. For our author is inclined to imagine, that although the uſual cauſe of bad fevers on board of ſhips is ſome infection derived from the living human body, yet that in ſome caſes they may be produced, parti-

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particularly in hot climates, from what may be called ſimple putrefaction, ſuch as took place in the holds of the French prizes. In this opinion, although of late it has been much controverted, we muſt own that we are diſpoſed to agree with him.

He next makes a compariſon of the health of the fleet under Lord Rodney with that under Admiral Vernon about forty years before. And this compariſon turns out much to the advantage of the former. He mentions in this place a curious fact, ſhowing, that the miaſmata inhaled by the body, which give riſe to the bad fevers of the climate, are for ſome time latent in the body before producing their effects: For thoſe men which had been expoſed to them in the watering duty, were taken ill ſome time after the ſhips went to ſea, and were the only men on board affected with ſuch fevers.

The fleet having again ſailed to America in the hurricane months, ſome obſervations occur on the influence of climate, on the progreſs of diſeaſe in long voyages, and on the beſt method of recruiting the health of a fleet while in port. In our author's relation of

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his different voyages, it is a frequent remark of his, that infection is not apt to be produced in a hot climate; that when imported there, it ſoon becomes extinct; and that the true jail-fever and the plague are unknown in the tropical climates. The moſt probable reaſon for this, in our author's opinion, is, that the heat exhales and diſſipates the noxious effluvia which create infection.

This ſecond book is concluded with a compariſon of the health of that part of the fleet which had been inured to the climate and to the ſervice, with that of a ſquadron by which the fleet had been reinforced from Europe in December 1782. This compariſon clearly ſhows the ſuperiority which the old ſquadron poſſeſſed in point of health. For during the firſt month, while the deaths in the old ſquadron did not amount to more than one in twelve hundred, thoſe in the new ſquadron amounted to about one in five hundred. In proportion, however, to their continuance in the Weſt Indies, the number of deaths gradually diminiſhed; and at the end of three months, the two ſquadrons came to be nearly equal in point of health.

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The third book contains a relation of the numbers ſent to the hoſpitals from the fleet during the term of the author's ſervice, and of the mortality among theſe from different diſeaſes and from wounds. The only three diſeaſes which Dr Blane thinks it neceſſary to ſpecify, are, fevers, fluxes, and ſcurvy. Theſe, he thinks, may be called the ſea epidemics. And, next to theſe, the moſt fatal complaint in a hot climate is the ſcorbutic ulcer. Here the author very properly takes notice of the fallacy of thoſe obſervations which would eſtimate the ſucceſs of practice from computations of the number of deaths in proportion to that of ſick. For this muſt depend very much on the ſlightneſs or violence of the complaints, and muſt be not leſs affected by the treatment in point of accommodation and diet than in the way of medicine.

To his other remarks in this part of the work, Dr Blane ſubjoins a general ſtate of the whole loſs of lives which occurred in the fleets and in the hoſpitals with which he was connected, during the period of his ſervice, which continued for three years and three

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months. There were killed in battle 648, there died of wounds 500, and there died of disease 3200. Thus it appears that the deaths from the two former causes put together amounted to little more than one-third of those which resulted from the latter alone: a striking proof of the necessity of employing every possible attention to the preservation of health during war. And it is by no means a new occurrence, that the number of those who in this situation die by disease is greater than the number who fall by the sword. There is good reason to believe, that this has held in all nations and ages, even in those ancient times when the slaughter in battle was much greater than in our days. And Dr Blane quotes a passage from Arrian's history of the expedition of Alexander the Great, to show that the same thing held even in his armies; which may perhaps be considered as the oldest authentic evidence to be met with on this subject. It has been with justice remarked, that the exertions of human ingenuity in improving the art of war, and particularly the discovery of gun-powder, has diminished the slaughter of battles. And there can be little

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doubt that an equal degree of attention, beſtowed on the means of preſerving health, would produce a proportional diminution of deaths from diſeaſe in the armaments of modern times.

The ſecond part of this work treats of the prevention of ſickneſs at ſea. To illuſtrate the very great importance of this, the author relates from hiſtory ſeveral expeditions which miſcarried ſolely from the prevalence of ſickneſs. And from obſerving the great diverſity in point of health, in ſhips of the ſame ſquadron, and with the ſame external and natural advantages, he infers, that the preſervation of health depends very much upon arrangements which are within the power of human attention; and that the means of accompliſhing this end are almoſt always attainable. The prevention of diſeaſes, he obſerves, is not only more important than the cure, but the means of it are more in our command; in as much as it is more within the reach of human art to keep people from coming in contact with contagion, to alter their food or cloathing, to direct what exerciſe they are to uſe, and what air they are to breathe,

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breathe, than it is to produce any given change in the internal operations of the body.

In purſuing this object of prevention, he obſerves, that it is alſo fortunate that the diſeaſes of ſeamen are but few and ſimple. They are chiefly fevers, fluxes, and the ſcurvy. Theſe indeed are, he allows, among the moſt fatal affections that can aſſail the human frame. But there is, he obſerves, a numerous tribe of complaints, and which conſtitute ſome of the moſt ſevere ſcourges of mankind, from which ſeamen are almoſt entirely exempted. Theſe are the diſeaſes to which the indolent and luxurious are ſubjected, and which ſo far embitter their life as to render their portion of worldly enjoyment nearly on a level with that of the poor and laborious. Among theſe may be enumerated, the gout, ſtomach complaints, hypochondriaſis, and other nervous and mental affections. To theſe the higher ranks of people are almoſt alone liable, as being much owing to the want of bodily exerciſe, to free indulgence in the pleaſures of ſenſe, and to a great keenneſs and delicacy in the paſſions and ſentiments of the

mind. He obſerves, however, that although muſcular exertion, and expoſure to the weather, be neceſſary to health, yet that in this there is a medium; and that when theſe amount to hardſhips, as frequently happens in the life of ſeamen, they tend to bring on premature old age. Hence it is, he obſerves, that this claſs of men are in general ſhort-lived.

The cauſes chiefly affecting health, according to Dr Blane, are four; air, aliment, exerciſe, and cloathing. Of each of theſe he treats ſeparately. He ſuppoſes air to be contaminated in three different ways; by marſhes, by the living human body, and by putrefaction. It would appear, he tells us, that the land air in hot climates has in general ſomething noxious. Ships, he obſerves, are very apt to be affected with the endemic diſeaſes of a country, when lying under the lee of the land, particularly at a place where there are marſhes. He adviſes that this therefore, where it is poſſible, ſhould be avoided. But the circumſtances in which ſeamen are moſt apt to catch the diſeaſes peculiar to hot climates, are in the duties of wooding and watering. Theſe,

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however, are operations unavoidable in the courſe of ſervice. But he adviſes, that the men, when upon theſe duties, ſhould not on any account be allowed to ſleep on ſhore; and that, when they are ſent on ſhore, they ſhould be allowed a dram of ſpirits and ſome Peruvian bark, or ſome other bitter and aromatic ſubſtance, to prevent the noxious effect of the air. He obſerves, that one of the moſt pernicious practices to Europeans who newly arrive in hot climates, is exerciſe in the heat of the ſun: and it is this, joined to intemperance in drinking, which render ſuch climates ſo fatal to them. Beſides the more obvious effects of bad air depending on heat and moiſture, Dr Blane mentions ſeveral inſtances of the ſingular quality of air in particular places; which, though its influence cannot be accounted for, has yet certainly the effect of producing the diſeaſes which are peculiar to ſuch places.

But the peculiar ſpecies of bad air which is more particularly the object of this work, is that which is produced by the living human body, from the neglect of cleanlineſs in the perſons of men. In this, he thinks, infec-

tion may be ſaid to conſiſt. This, he obſerves, is the origin of jail or hoſpital fever, as it has been called; and is the principal cauſe of the moſt fatal ſickneſs prevailing in ſhips. Under this article he inquires, 1*ſt*, Into the means of preventing the introduction of ſuch infection; 2*dly*, Into the means of preventing its generation; and, 3*dly*, Into the means of eradicating it. Under the firſt head, his chief cautions are directed againſt receiving men from guard-ſhips, where they have been confined after being impreſſed into the ſervice, or after being brought from jails. He ſtrenuouſly recommends that they ſhould be previouſly purified, by waſhing them, and by changing their cloaths.

Great caution, he obſerves, is alſo neceſſary in preventing the crews of ſhips from mixing with priſoners of war, or with thoſe men who have been returned in tenders after being confined in the enemies jails. The author here introduces two remarks, which may perhaps appear new to many readers. The firſt is, that men who have been long confined, and whoſe perſons have been neglected

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in point of cleanlineſs, may excite fever in others, though they have it not themſelves, in the ſame manner as has been known to happen in the trials of criminals. The other remark is, that two ſets of men, though ſeparately healthy, may mutually produce diſeaſe among each other when mixed.

Dr Blane here enters into ſome general reflections on the nature of contagion. But he acknowledges that there is very great obſcurity in this as well as in other operations of the animal œconomy. It is fortunate, he obſerves, that even in the moſt prevailing contagions, only a certain portion of thoſe expoſed to it are ſeized. He diſtinguiſhes between that infection which conſiſts in a continued communication of matter, ſuch as ſmall-pox or the like, and that which is occaſionally produced, ſuch as fever: And he concludes with remarking, that it is none of the leaſt curious facts with regard to infection, that there are ſome ſpecies of it by which the body is liable to be affected only once in its life. When this is properly conſidered, it is indeed conformable to what happens in the courſe of the diſeaſe itſelf: for

for unleſs there were in the body a power of reſiſting it, there could be no ſuch thing as recovery. When the diſeaſe actually exiſts, the continued preſence of the poiſon, which is alſo infinitely multiplied, would infallibly produce death in all caſes, unleſs the living powers were to become inſenſible to it.

The next caution recommended by the author, is what tends to prevent the production of infection. The chief means of effecting this are cleanlineſs and ventilation. He contends, that the moſt valuable part of diſcipline conſiſts in enforcing theſe; and he propoſes that there ſhould be certain eſtabliſhed methods of inſpecting the perſons and the cloathing of the men. He earneſtly exhorts the officers, whoſe particular province it is, to exert themſelves on theſe points. For without theſe, every other precaution conducing to health would be thrown away. It would, he obſerves, be to little purpoſe to provide the moſt nouriſhing and antiſcorbutic diet, the moſt wholeſome and cordial wines, the moſt efficacious remedies, and the moſt ſkilful practitioners, if the men be not conſtrained to

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keep their perſons ſweet, their cloathing and bedding clean, and their births airy and dry.

The laſt article treated of under this head, is the means of eradicating infection. This is propoſed to be done, by ſeparating thoſe who are ill of infectious complaints from the others, either by aſſigning a particular birth to them in the ſhip, or by ſending them to an hoſpital. And for this purpoſe, it is not only neceſſary that an early attention ſhould be paid to thoſe who are taken ill, to prevent perſonal intercourſe with thoſe in health, but that attention ſhould alſo be paid to their cloaths and bedding. Theſe, as circumſtances may ſeem to require, are either to be deſtroyed or thrown over-board, or to be carefully waſhed and ſmoked. Where the ſick can be entirely removed, he recommends that their births ſhould be cleanſed, that fires ſhould be made in them, and that they ſhould be white-waſhed with quicklime. And when the infection is inveterate, ſo that there is a ſuſpicion of its adhering to the timbers of the ſhip, it ought to be thoroughly fumigated. But he conſiders heat as conducing more to the deſtruction of contagion than ſmoke; and

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he looks upon fire as being its moſt effectual antidote.

The third ſpecies of foul or noxious air of which Dr Blane treats, is that which is generated in a ſhip by what may be called ſimple putrefaction. This relates to that ſort of cleanlineſs which is independent of the perſons of the men. And on this ſubject, in comparing the Engliſh with the French ſhips, and the preſent times with paſt ages, he draws a parallel very favourable to this country, and to the preſent age. It has, he ſays, been doubted by men of high authority, whether any corrupted quality of the air was really noxious, but that which proceeds from the living human body. But he contends from facts, that, in hot climates at leaſt, fevers may be produced by the putrid effluvia of external inanimate bodies. The principal means of removing this ſort of evil are, by frequent ſcrubbing and waſhing the upper decks of a ſhip, and by producing dryneſs and change of air below, from fires, wind-ſails, clean balaſt, and tightneſs of the bottom.

In the ſucceeding ſection, Dr Blane treats of the means of guarding againſt infection and bad

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bad air. For to this individuals will often be unavoidably expoſed. He obſerves, that in conſequence of the endleſs variety which occurs in the human frame, both with reſpect to mind and body, ſome people are naturally much more ſuſceptible of diſeaſe than others; and that this ſuſceptibility is alſo affected by habit, and by certain temporary conditions of the body. It has been obſerved, that thoſe who can afford generous diet, are better fitted to reſiſt infection than thoſe who uſe a meagre and watery diet. Attention, therefore, is due to this circumſtance. He adviſes alſo, that no one ſhould go to the ſick with an empty ſtomach; and that whatever tends to weaken and exhauſt the body, or to depreſs the mind, ſhould be avoided. He alſo enumerates cold and moiſture as circumſtances which invite the attack of infectious diſeaſes. In ſituations where general contagion prevails, thoſe diſeaſes depending ſimply on cold and moiſture do not appear. Every diſorder of the body then takes the form or gives occaſion to the reigning epidemic. And on this principle, the author accounts for a fact recorded by Thucydides, that during the plague

at Athens, no other complaint appeared; and alſo for an obſervation which he has himſelf made, that ſuch diſeaſes as are ſimply the effect of cold and moiſture, were only to be found in thoſe ſhips that were free of infection, while they did not at all exiſt in others ſubjected to it.

In order to take proper means for avoiding the influence of contagious effluvia, it is of the utmoſt conſequence to aſcertain the limits of their action. And Dr Blane alleges, that it has been for want of this knowledge that the plague has on ſome occaſions ſpread ſo much. For in conſequence of the opinion that the whole ſurrounding atmoſphere was affected, attempts were vainly made to purify it, by large fires in the open air; while the precautions of avoiding the near approach of the ſick, and of confining thoſe in health to their houſes, were entirely neglected. Theſe, however, are, he thinks, the only effectual precautions. Here he takes occaſion to mention it as being a fact no leſs curious than important, that the true peſtilence has never been known to exiſt within the tropics; and that

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that hot climates are unfavourable to all ſorts of infection of the volatile kind.

The next ſubject which engages our author's attention is aliment. Of this he treats under the two heads of ſolid food and drink. As he conſiders the ſcurvy, which is the diſeaſe moſt peculiar to a ſea-life, to be principally owing to the quality of the food, he thinks it highly important to ſuggeſt ſuch alterations and improvements in it as may prevent that deſtructive diſeaſe. Theſe improvements are either articles of common diet, ſuch as melaſſes and ſour kraut, intended for the whole ſhip's company; or thoſe more particularly intended for the ſick and the convaleſcents, as portable ſoup, dried fruits, rice, and the preſerved juice of oranges or lemons.

With regard to drink, he obſerves, that the moſt material practical improvement would be, to introduce malt liquor or ſpruce beer in place of the ſpirits. Porter can be kept for any length of time in all climates; and ſome facts are mentioned which inconteſtably prove its antiſcorbutic virtue. Spruce beer is equally ſalutary, and the materials for making it are eaſily portable; ſo that it may be procu-

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red in all climates. Next to thefe wine is to be preferred; and decifive proofs are alfo brought of the great advantage of this over fpirits.

Under the head of drink, Dr Blane treats of water, and of the beft methods of preferving and purifying it. He confiders quicklime as the moft effectual prefervative of water; and ftrongly recommends the mixing a pound of it with each butt of water when the butt is filled. Dr Blane here takes notice of the ingenious propofal fome time ago made by Mr Henry of Manchefter, for precipitating the lime from the water; by which it might be furnifhed, at the end of a very long period, perfectly preferved, and at the fame time free from any impregnation. But although he admits that it is founded on juft chemical principles, he expreffes a fear that it is too nice and complex to be brought into common practice. This, however, can be no objection to fhips of war being furnifhed with the proper materials for putting it in practice when neceffary.

The next chapter treats of cloathing. This, he obferves, is neceffary in all climates, as it

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is hurtful to the health to expoſe the naked ſurface of the body, eſpecially in a ſtate of perſpiration, even to warm air. When the air is loaded with noxious matter, he thinks clothing may be conſidered as a filterer, ſeparating the impurities of the air before it comes in contact with the body. Hence, though the cloathing is certainly to be adapted to the climate, it is, he obſerves, of the utmoſt conſequence, that ſufficient and ſuitable cloathing ſhould be provided. And he gives it as his opinion, that it would be of the utmoſt conſequence to the ſea-ſervice, that an uniform ſhould be eſtabliſhed for the common men as well as for the officers. This would oblige them to have at all times in their poſſeſſion a quantity of decent apparel, ſubject to the inſpection of their ſuperiors.

The laſt chapter of this part contains obſervations on exerciſe. As in every ſhip of war there are a great number of men more than what are neceſſary to navigate her, there is great hazard of their indulging in indolence; than which nothing is more apt to bring on diſeaſe, particularly the ſcurvy. It ſhould therefore be an object of diſcipline to prevent

prevent this. As every thing that produces jollity, contentment, and good humour, so far as is consistent with sobriety and regularity, has a favourable effect upon health, he recommends the use of different sports; and he even regrets, that certain rough sports formerly fashionable among the seamen have now unfortunately fallen almost into disuse. And he thinks that the commanders who revive and encourage them, perform an useful service to the fleet. But if evils sometimes arise from want of exertion, there is, he observes, another extreme, perhaps more frequent and pernicious in a sea-life; that is, excess of exercise and of watching. This indeed not unfrequently is unavoidable. But he recommends great tenderness to men in this respect, as nothing has a greater tendency to wear out the constitution than excessive bodily exertion.

Dr Blane's remarks in this part of his work are offered rather in a summary way. And perhaps it may be considered as a sufficient apology for this, that it falls more within the province of officers than of the medical practitioners. The importance of the subject,

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however, is a sufficient apology for recommending it on every occasion to the attention of those who are intrusted with the direction of the navy, either in a civil or military capacity. And we are persuaded there are few who will not readily subscribe to his remark, that there is no situation in life in which there is room for more virtues, more conduct, and more address, than that of a sea-officer. The men are thrown upon his humanity and attention in more views than one. They are subject to a more arbitrary exertion of power than the law of a free state authorises in civil life. From considerations of public utility, Britons, in this situation, surrender no inconsiderable share of that liberty which they hold most dear to them. It is the character of seamen to be thoughtless and neglectful of their own interest; they require to be tended like children. But from their usefulness, bravery, and other good qualities, they are intitled to parental tenderness and attention, from the state they protect and the officers they obey. And while it is the duty of the state to make every possible provision for the health and comfort of seamen, one of the chief

excellencies in the character of a good officer, consists in reconciling strict discipline with indulgence and humanity.

To this part of Dr Blane's work is subjoined an appendix, containing a memorial presented by the author to the Admiralty in 1781, and a supplement to that memorial presented in 1782. This memorial states, that in the preceding year there had prevailed a considerable mortality on board his Majesty's ships in the West Indies, nearly one man in seven having died in that time; of whom a very small proportion fell either in battle or in consequence of wounds received in action. This melancholy fact led the author to employ all the attention of which he was capable, in endeavouring to discover the causes of such mortality, and to propose the most effectual remedies. These remedies are the subject of this memorial. For a summary view of them, they may be reduced to the following heads. *1st*, The establishment of a certain method of discipline, in order to secure regularity and cleanliness among the men, and to render the ships clean and dry. *2dly*, The supply of fruits and other vegetables for the

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the cure of ſcurvy. 3*dly*, The ſubſtitution of wine or beer for rum. 4*thly*, The proviſion of an adequate quantity of neceſſaries for the ſick. 5*thly*, The furniſhing to the ſurgeon a gratuitous ſupply of ſome of the moſt coſtly articles, ſuch as the Peruvian bark. 6*thly*, The curing of particular diſeaſes on board, inſtead of ſending them to hoſpitals. And, *laſtly*, the preventing of filth, crowding, and the mixture of diſeaſes, in hoſpitals, by proper regulations, and by eſtabliſhing hoſpital-ſhips.

The ſupplement to this memorial contains a practical confirmation of moſt of the means propoſed above; and the author gives an example in the caſe of the Formidable, of the great and ſalutary effects reſulting from the propoſed improvements. There were generally eight hundred men on board this ſhip: of theſe not one died of diſeaſe from December 1781 to May 1782; and only thirteen, whoſe complaints were ſmall-pox and ulcers, were ſent to hoſpitals. In the months of May and June, when at Jamaica, there died of diſeaſe in this ſhip three men; and there were ſent to the hoſpital ſeventeen, moſt of whom had contracted their ſickneſs on board the

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French prizes. This may be confidered as an experiment made under the eye of Dr Blane, to afcertain what degree of health it is poffible to obtain on board large fhips of war, even in the climate of the Weft Indies, by a ftrict adherence to the regulations he has propofed. And the fuccefs with which this experimental trial has been attended, gives the higheft poffible encouragement to have thefe regulations rigidly obferved on future occafions.

The third and laft part of Dr Blane's work contains practical obfervations on the difeafes moft commonly occurring among feamen in warm climates. He regrets that there were feveral obftacles to his making obfervations fo accurately as he could have wifhed. Thefe were chiefly the bad accommodation of the fick at fome of the hofpitals, and the fhortnefs of his ftay at any one place. But having practifed among great numbers, obfervations neceffarily arofe from the comparifon of fo many cafes. And amidft the variety of emergencies and hardfhips connected with war, nature, he obferves, is feen under trials not to be met with in common life. The difeafes of

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of which he treats in this part of his work are, fevers, fluxes, and the ſcurvy. We ſhall here preſent our readers with ſome view of his obſervations on each.

The fevers which occurred moſt frequently on board the ſhips, and at the naval hoſpitals, were, the infectious ſhip-fever, the bilious remitting fever, and the yellow fever. His deſcription of the firſt of theſe, which he conſiders as being the ſame with what is commonly called the jail or hoſpital fever, does not differ materially from that given by Sir John Pringle and Dr Lind. He conſiders muſcular debility, low delirium, petechiæ, and a peculiar feeling of the ſkin, as its chief characteriſtic ſymptoms. His ideas concerning the nature of delirium are ſomewhat peculiar. It ſeems, ſays he, chiefly to conſiſt in a falſe reference of our ſenſations, whether external or internal. When any painful impreſſion is made by an external body, the patient, in a ſtate of delirium, does not refer it juſtly to the part affected; but the general agitation and incoherence of ſentiments are aggravated for the time. He has known inſtances where a degree of heat applied to the

extremities ſufficient to bliſter them, had not the effect of making the part ſhrink; though the raving and general uneaſineſs were increaſed. In like manner, with regard to internal ſenſations, when an irritation is excited to expel the urine or feces, the mind does not recogniſe it as ſuch: but from a ſenſe of uneaſineſs, probably miſtaken for ſomething elſe, an effort is made to relieve nature, which is done without proper conſciouſneſs; and certain ſymptoms are produced which are well known marks of danger in this fever. In watching thoſe under the influence of delirium, he has obſerved it increaſe when any particular want of nature urged, the patient being incapable of procuring himſelf any immediate relief; but he would become calm after voiding urine or feces, or after receiving ſomething to drink, according to the particular want that was preſent at the time. So great, he obſerves, is the diſorder in the common courſe of ſenſation in this fever, that a perſon ill of it has been even unconſcious of inflammations in vital parts; which, in the natural ſtate of the nerves, would have excited the moſt acute pain, and would have been

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diftinctly referred to the part affected, but which were not difcovered till after death. It would, he adds, appear, that the motions excited in the brain and nerves in fuch cafes, inftead of producing the fenfation naturally belonging to them, ferve to excite difagreeable emotions of a different kind; and in thefe the delirium confifts.

After fome other obfervations on the characterifing fymptoms of this fever, the author next points out the different modifications of it, from the heat of the climate, and fome marks diftinguifhing it from the inflammatory fever. He then proceeds to the treatment; the firft part of which confifts in attempting to cut the difeafe fhort in the beginning, by procuring a remiffion by means of evacuations, and the exciting a fweat by antimonial and neutral medicines combined with a gentle opiate. If thefe means prove fuccefsful, the Peruvian bark fhould be thrown in without lofs of time. But though they be not fuccefsful, the future progrefs of the difeafe will, he thinks, be fafer. The treatment then confifts in avoiding evacuations, except fupporting a gentle diaphorefis. But when

the difeafe comes to be a little farther advanced, it is, he thinks, advifable to lay afide antimonial and neutral medicines. Dr Blane was led to think well of diaphoretics in this fever, both from experience, and alfo from obferving, that in thofe cafes for which nature does moft, there was an univerfal warm fweat, which was generally of an offenfive fmell. In fuch cafes he thinks little medical affiftance is neceffary, excepting the fupporting perfpiration by warm diluents: And he adds, that there is no circumftance in which the judgment of a phyfician is more fhown than in diftinguifhing thofe cafes in which his chief bufinefs is to look on, when nature being equal to the tafk is not to be difturbed by the officious interpofition of art.

After antimonial medicines have been laid afide, camphor and pediluvia, or fomentations, may be employed to preferve the fkin foft. Dr Blane here makes a practical ufe of his opinion concerning delirium. For as he thinks it confifts in a depravation of the confcioufnefs of the natural wants, and therefore in an inability to relieve them, he recommends that an unremitting attention fhould

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be paid to the patient's feelings, and to all his poſſible wants; ſince thoſe natural notices and inſtinctive cravings which occur in health are now wanting, in conſequence of the depraved ſtate of ſenſation. He condemns an early and indiſcriminate uſe of the Peruvian bark: but he obſerves, that in the more advanced ſtages of the fever, an abſolute remiſſion is not neceſſary for its adminiſtration; and when he has been very anxious to give it, on account of the fatal tendency of fevers in hot climates, he has either joined it with an antimonial or neutral medicine, or alternated its uſe with theſe, to take off the heating effects it might otherwiſe have produced.

In the more advanced ſtages of this diſeaſe, in which the principal ſymptoms are tremors, agitation, and low delirium, he recommends bliſters and opiates. But he lays the chief ſtreſs on the latter; and recommends either ſmall doſes of laudanum or of compound officinals which contain it, given at the interval of a few hours. In this ſtate he thinks caſtor an uſeful addition; and, when there is a coldneſs and languid circulation, he adviſes wine and ſerpentaria. As patients are apt to ſink

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from weakneſs in the convaleſcent ſtate, eſpecially circumſtanced as ſeamen are, he reſts a great deal on the judicious adminiſtration of nouriſhment at this time.

The next ſpecies of fever of which he treats, is the bilious remitting fever. This is diſtinguiſhed from that laſt deſcribed, by its tendency to remit, by the bilious vomiting and looſeneſs, by more violent delirium and headach, and by its being attended with leſs debility. This is the fever to which thoſe men are chiefly ſubjected, in warm climates, who are ſent to wood and water in the vicinity of marſhes. The treatment of it differs from the foregoing form of fever, in requiring more evacuation, eſpecially by the bowels; and it not unfrequently happens that bloodletting is proper on the firſt attack. When, from ſickneſs, and a ſenſe of weight about the præcordia, there is reaſon to ſuſpect that the excretion of bile is retarded, Dr Blane recommends calomel in preference to other purgatives: He alleges, that the ſtimulus of it is ſo extenſive as to looſen and bring away bile when other purgatives have failed of that effect, and that it will be more effectual for

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this purpofe, if given in a dofe from five to ten grains, and followed in a few hours by fome other purgative. He thinks that antimonial medicines anfwer better in this than in any other fpecies of fever, acting chiefly by the different evacuations they produce. He tells us, that when a number of men were fent to the hofpital with this fever, he had an opportunity of comparing tartar emetic with James's powder, by giving the firft medicine to the one half, and the laft to the other. From this trial he could perceive no ground for preferring the one to the other. When this fever happens to be protracted for a confiderable length of time, the treatment then proper comes more and more to refemble that of the fever firft defcribed. The great object in the treatment is, firft to procure a remiffion, and then to throw in the Peruvian bark.

The laft fpecies of fever of which Dr Blane treats, and which alfo frequently occurred at the naval hofpitals, is the yellow fever. This, he obferves, is more peculiar to a hot climate than any other; but is hardly known excepting in fea-port towns, among thofe who have newly

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newly arrived from a temperate or cold climate. The moſt remarkable circumſtance in the deſcription of this fever is its great rapidity, as it generally proves fatal in two or three days. The moſt characteriſtic ſymptoms of it are, the univerſal yellowneſs of the ſkin, and the vomiting of a black-coloured matter. This black colour is found to be owing to ſmall dark flakes reſembling grounds of coffee, and ſeems to be blood a little altered, which had oozed from the ſurface of the ſtomach. Dr Blane gives a very full deſcription of this fever, and a very affecting account of the ſufferings of thoſe who are attacked with it; but as we cannot enter into the detail, we muſt refer our readers to the work itſelf.

With reſpect to the treatment of the yellow fever, he expreſſes his regret that it is ſo little the object of art, ſince in moſt caſes it baffles every remedy that has yet been diſcovered. There can hardly, he obſerves, be a doubt, that ſome particular diſeaſes are in their own nature determinedly fatal; the animal functions from the firſt being ſo deranged that there are no poſſible means in nature capable

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of controlling the ſeries of morbid motions which lead to diſſolution. Of this kind appear to be the greater number of caſes of the plague, many of the malignant ſmall-pox, and ſome fevers, particularly of that kind now under conſideration. It is extremely difficult to aſcertain ſuch caſes from obſervation; and it may be ſaid, that the opinion of the exiſtence of them is favourable to ignorance and indolence. But, on the other hand, it is much to be queſtioned, whether more harm has not been done by being too officious, than by a diffidence in art, and truſting to the powers of unaſſiſted nature. Were we thoroughly acquainted with the animal œconomy, we ſhould perceive *à priori* in what inſtances the ſeeds of diſeaſe would either operate, ſo as neceſſarily to terminate in death, or when they are within the command of art. But from our ignorance of the ſecret operations of the living body, we can derive little or no information from this ſource; ſo that our only grounds of judging are obſervation and experience concerning the uſual event of diſeaſe, and the effects of remedies.

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One of the great difficulties in the cure of this diſeaſe is, he obſerves, a conſtant and unconquerable irritability of the ſtomach. In abating this ſymptom, he found a bliſter applied to the region of the ſtomach of more ſervice than any other remedy: and when the ſtomach can be brought to bear medicine, a free uſe of the Peruvian bark was evidently ſerviceable, and was indeed the only remedy to be relied on. This diſeaſe does not, he tells us, bear evacuations, excepting in the very beginning, nor is there the ſame neceſſity for them as in the fever laſt deſcribed: for in general there is no increaſed ſecretion of bile; and when ſuch an increaſe does take place, it is always a favourable circumſtance.

Dr Blane concludes the ſubject of fevers with a ſection on intermittents. For though theſe be not, he tells us, ſo frequent in a hot climate as in ſome cold and temperate climates, yet they are apt to be more obſtinate. From having in theſe caſes frequently experienced the inefficacy of the Peruvian bark, he was tempted to think, either that the reputation of this medicine is not ſo well founded as is commonly believed, or that the bark

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commonly in uſe at theſe times is not ſo good as that employed by the phyſicians who firſt eſtabliſhed its character. He is inclined to think that they may have uſed what is now generally known under the title of the red bark, the employment of which has lately been revived by Dr William Saunders of London. Of this bark he had no opportunity of making trials; but the numerous inſtances in which the common pale kind failed became extremely diſtreſſing both to the medical practitioner and to the patient. And his chief intention in this ſection is to recommend the flowers of zinc in theſe caſes; a remedy to which he had firſt recourſe by the advice of Dr Hendy of Barbadoes, and by means of which he cured three out of five of theſe intermittents which had reſiſted the bark. This article was given in doſes of two, three, or four grains, thrice a day, with the moſt unequivocal evidence of ſucceſs. And ſimilar ſucceſs, we are told, was alſo derived from this metal when given under the form of white vitriol. But Dr Blane limits the uſe of the zinc to caſes of long continuance.

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The next diſeaſe which is the ſubject of obſervation is the dyſentery. This, he alleges, ariſes from the ſame circumſtances, and is owing to the ſame general cauſes as fevers. He thinks it may be conſidered as fever attended with peculiar ſymptoms, in conſequence of a determination to the bowels, in the ſame manner as fevers in cold climates are attended with rheumatiſm or catarrh. The circumſtances determining the body to dyſentery, rather than proper fever, are climate and ſeaſon, peculiarity of conſtitution, the nature of the occaſional cauſe, and the preſence of infection. He divides this diſeaſe into the acute dyſentery, ſtrictly ſo called, and chronic fluxes, in conſequence either of dyſentery or of neglected diarrhœas. It appears from numerous diſſections, of which he gives a particular deſcription, that the deaths of thoſe patients were occaſioned by incurable ulcerations in the great inteſtines.

With regard to the treatment, he obſerves, that there are few diſeaſes in which a prudent application of art is more uſeful, or in which early means of relief are more requiſite. In the acute ſtate, he reſts the cure on early and

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briſk evacuation, by ſaline and antimonial medicines, and the exciting a ſweat by ipecacuanha conjoined with an opiate. If the diſeaſe ſhould not be removed by theſe means, he recommends frequent ſmall doſes of ipecacuanha. He cautions young practitioners againſt the free and indiſcriminate uſe of opium. In the removal of tormina and teneſmus, he found the warm bath and bliſters of great ſervice.

He next treats of the dyſentery in its chronic ſtate. In the adminiſtration of opium in this ſtate of the affection, he cautions the practitioner to premiſe ſufficient evacuation, to accompany the opiate with a laxative medicine in order to obviate coſtiveneſs, or with an antimonial in order to prevent the feveriſh acceſſion which it might excite. In enumerating the cauſes which keep up the chronic flux, he mentions too great ſecretion of bile, ulcers in the inteſtines, a lienteric ſtate of the bowels, and the retention of ſcyballa. He recommends particular modes of cure appropriated to each of theſe caſes. But for theſe we muſt refer our readers to the work itſelf; and ſhall only obſerve, that he conſiders the

fuccefs in practice as very much depending on being able to afcertain the particular caufe, on which the cafe to be treated, depends.

The next chapter of this work treats of the fcurvy. On this fubject, Dr Blane is not fo full as on the former difeafes. As he confiders the cure of it to depend chiefly on diet, remarks concerning it naturally occurred in the former part of his work. Befides this, he alfo obferves, that Dr Lind has fo far exhaufted the fubject as to leave little to be faid. He thinks that a vitiated or a fcanty diet are the chief caufes of fcurvy: but he is of opinion, that it is alfo promoted by cold, moifture, filth, floth, and dejection of mind.

He is inclined to think that hard labour tends to prevent it. With regard to the cure, he brings facts in proof of the fuperiority of frefh vegetables over frefh animal-food; and from repeated and extenfive experience, he gives a preference to fruits of the lemon and orange kind over every other antifcorbutic. He, however, candidly acknowledges his ignorance with refpect to the method in which thefe fruits operate in curing the difeafe. And he affirms, that the recent juice of

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of theſe fruits is highly uſeful when externally applied to thoſe obſtinate ſcorbutic ulcers which are ſo troubleſome in hot climates. The infuſion or eſſence of malt, which has been conſidered as a ſpecific in this diſeaſe, he found to be poſſeſſed of only very inconſiderable virtues, when compared with the juices of the fruits already mentioned. In recent caſes, however, and in ſcorbutic ulcers, it was found to be evidently advantageous. In theſe ulcers, the Peruvian bark was found to be of little uſe; but opium given internally was remarkably ſerviceable. He obſerves, that the moſt rapid recoveries from the ſcurvy were in thoſe caſes in which a ſpontaneous diarrhœa occurred. In conſequence of this, ſome of the ſymptoms, ſuch as the livid appearance on the legs, would vaniſh even in a few hours. This he ſuppoſes to happen in conſequence of an abſorption excited by purging, in the ſame manner as ſometimes occurs in the cure of dropſy. In treating of this diſeaſe, Dr Blane enumerates ſeveral uncommon ſymptoms, and makes ſome remarks upon them. But for theſe we muſt refer our readers to the work itſelf

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This work is concluded by a chapter on the wounds received in the actions of April 1782. He gives the following ſtate of the killed and wounded in the two battles of that month :

Killed outright,	266
Died of their wounds on board,	67
Died of their wounds in the hoſpital,	21
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The whole number wounded was 810. The remarks in this chapter are chiefly with regard to the locked jaw ; eighteen caſes of that affection having occurred among the wounded, of which fifteen proved fatal. The three that ſurvived this affection, whoſe caſes are detailed at full length, were treated with opium and the warm bath. He obſerves, that the locked jaw takes place as often in thoſe wounds which heal in a favourable manner as in thoſe which are difficult of cure. As a proof that this fatal ſymptom does not ariſe from the immediate irritation of the wound, but that it proceeds from a cauſe exiſting for ſome time in the conſtitution, he tells us, that it is not ſtopped by the amputation of the

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wounded member; and that it has ſometimes been known to come on even after the wound has been cicatrized.

Dr Blane ſubjoins to his obſervations on locked jaw, ſome remarks on thoſe accidents which happen from what is called the wind of a ball, and on the ſcorches which happen from gun-powder. He mentions ſeveral facts to prove, that parts may be injured, nay that inſtantaneous death may even be produced, by a cannon-ball paſſing very near the body. He contends, that this is moſt apt to prove fatal when it paſſes near the ſtomach. With regard to ſcorches from gun-powder, he obſerves, that from want of due caution, a great proportion of the killed and wounded in ſea-battles ariſes from accidents of this kind. But he aſſigns ſeveral reaſons why they were not ſo frequent in the battles of April 1782 as in the former parts of the war. He found linſeed-oil mixed with lime-water or with ceruſe, to be the beſt application in theſe caſes.

Dr Blane concludes this chapter with ſome remarks on the neceſſity of ſtopping hæmorrhage in the time of action. It frequently happens, that men bleed to death before aſ-

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ſiſtance can be procured; and in other caſes, they loſe ſo much blood as to be unable to go through an operation. To prevent this, it has been propoſed to make each man carry about him a garter or piece of rope-yarn, to bind up a limb in caſe of profuſe bleeding. To this, he obſerves, it may be objected, that from its ſolemnity, it may be apt to intimidate common men. But he thinks that the officers at leaſt ſhould make uſe of ſome precaution, as many of them, and thoſe of the higheſt rank, are ſtationed on the quarter-deck, which is one of the moſt expoſed ſituations, and are far removed from the cock-pit, where the ſurgeon and his aſſiſtants are placed. Want of attention to this circumſtance was, he obſerves, the cauſe of the death of that brave officer Captain Bayne of the Alfred, who having had his knee ſo ſhattered that it became neceſſary to amputate the limb, expired under the operation, in conſequence of the weakneſs induced by loſs of blood in carrying him ſo far. As Admiral Rodney allowed Dr Blane the honour of being at his ſide in the time of action, he carried in his pocket ſeveral tourniquets of a ſimple conſtruction, leſt acci-

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accidents to any perſon on the quarter-deck ſhould have required their uſe. There can, we apprehend, be no doubt of the propriety of recommending that this example ſhould be followed in every action, by entruſting intelligent men in different parts of the ſhip with ſimilar inſtruments, to be uſed when occaſion may require.

He tells us, that the method of taking up veſſels by the tenaculum was found to anſwer extremely well. But he thinks, that from want of light and of ſteadineſs, it is hardly to be attempted in time of action. And he adds, that it was found to be chiefly ſucceſsful in the hoſpitals.

He alleges, that wounds in the head and trunk heal more readily in hot than in cold climates; but that thoſe in the extremities are there more difficult of cure. He adds, that in reaſoning upon this ſubject, it may be ſaid, that as healing depends on a certain degree of vigour in the powers of life, this ſhould not err either on the ſide of exceſs or defect. If it be too great, as in the caſe of a hale plethoric conſtitution in a cold climate, too much inflammation is apt to be excited: and if it

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be too feeble, as happens in hot climates, in the lower extremities, which are far removed from the ſource of life and circulation, the ſalutary effort is not ſtrong enough to generate new organized parts. But in the trunk of the body, in ſuch a climate, the powers of the animal œconomy are, he obſerves, in that juſt medium which is moſt favourable to this operation of nature.

How far this reaſoning is ſtrictly well founded, we will not pretend to ſay. But the candid reader will at leaſt admit that it is ingenious. But ingenuity is by no means to be conſidered as the principal merit of Dr Blane's work. He has preſented us with the fruits of faithful and accurate obſervation, neceſſarily ſuggeſting many particulars of the higheſt importance, both in the cure of the diſeaſes moſt common at ſea, and in the prevention of thoſe affections proving moſt fatal to fleets and armies. In our opinion, many of his ſuggeſtions with reſpect to future improvements well deſerve the moſt ſerious attention, not only from medical practitioners, but even from the legiſlature itſelf. And whether the propoſals he has made ſhall in future

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future be properly carried into execution or not, yet we cannot help thinking that he is well intitled to the thanks of his country for the unwearied attention which he has evidently beſtowed in diſcharging the duties of his office as phyſician to the fleet, and for at leaſt endeavouring, by means of the publication of which we have here given an analyſis, to render his obſervations uſeful to poſterity.

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Traité ſur le Vénin de la Vipere, ſur les Poiſons Americains, ſur le Laurier-Ceriſe, et ſur quelques autres Poiſons Vegetaux. On y a joint des Obſervations ſur la Structure Primitive du Corps Animal. Par M. Felix Fontana, *Phyſicien de S. A. R. l'Archiduc Grand-Duc de Toſcane, et Directeur de ſon Cabinet d'Hiſtoire Naturelle.* 4to, Florence.

THE work now before us has juſtly claimed no inconſiderable ſhare of the attention of philoſophers, both for its originality and for the number of important diſcoveries which it contains: And theſe diſcoveries are not the production of a fanciful imagination, but the fruit of experiment. Theſe experiments, which on the ſubject of the viper alone exceed ſix thouſand in point of number, have been deviſed with ſingular ingenuity, executed

ted with aſtoniſhing accuracy, and crowned with uncommon ſucceſs. Hence while they lead to the moſt ſatisfactory refutation of numberleſs errors, they afford alſo a luminous diſplay of new facts.

The firſt part of this work was publiſhed ſome years ago in the Italian language. It afterwards appeared in French, in the form now before us. And of late the whole has been tranſlated into Engliſh.

This curious and intereſting work is divided into four parts. In a ſhort introduction prefixed to the firſt of theſe, Mr Fontana ſhows how little authors agree among themſelves reſpecting the poiſon of the viper. Theſe differences have, he obſerves, taken place among men of accuracy and candor, not merely with regard to matters of opinion, but even with regard to thoſe things expoſed as it were to the eye. When he found that the obſervations of ſo celebrated a writer as Dr Mead claſhed with thoſe of Redi, he concluded, that, without being wanting in reſpect to the authority of theſe great men, it was neceſſary he ſhould truſt ſolely to his own eyes. And if this ſhould lead him to repeat truths former-

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ly publiſhed by other obſervers, it will readily be pardoned by the candid reader.

He ſets out by giving a brief account of the number, ſtructure, and uſe of the teeth of the viper. This animal has three orders of teeth. The canine teeth, which are ſometimes found to the number of four, ſeldom of three, ſometimes of two. At the baſis of theſe large teeth, and quite out of the ſockets, there are invariably ſix or ſeven, ſometimes even eight, very ſmall teeth. They are faſtened at their baſis by a kind of web of a fine and ſoft membranous texture. They diminiſh in ſize in proportion as they are more diſtant from the ſockets of the canine teeth: the ſmalleſt are tender and imperfect, being as it were mucous, particularly at their baſis; and our author thinks that they in reality owe their formation to a whitiſh and gelatinous matter. The third order are ſtill more minute than the preceding. They reſemble ſmall hooks, and are ſtrongly fixed, to the number of ten, eleven, ſometimes of fifteen, in two ſmall pretty long parallel bones, which, on each ſide, form the upper jaw; and

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of eight, nine, ſometimes of twelve, in each of the bones which form the lower jaw.

The canine teeth are ſeldom more than three lines, Paris meaſure, in length. The baſis of each is not more than half a line in diameter, and its figure is that of a horn, a little flattened and ſomewhat bent towards its baſis. Mr Fontana very particularly deſcribes the tubulated ſtructure of theſe teeth, and ſhows that they have a double pipe almoſt their whole length; a circumſtance hitherto entirely unknown to obſervers. The ſecond order of teeth very much reſemble theſe, both in their inner and outer ſtructure. The two conduits, internal and external, are alſo ſeen in them. It is not, however, the ſame with the very ſmall teeth fixed in both jaws: theſe have no channel, and have no kind of opening either at the point or baſis.

When the viper wiſhes to bite, its canine teeth are raiſed by a peculiar mechaniſm. And Mr Fontana has no doubt in affirming, contrary to the opinion of ſome other obſervers, that the viper, inſtead of ſimply biting with two teeth, one at each ſide, muſt ſeize equally with all thoſe that are firmly fixed in

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in the ſockets. From the figure of theſe teeth, the animal can never bite without a riſk of loſing ſome of them. And he obſerves, that it is with great ſagacity that Nicholls conjectures that nature has intended the ſecond order of teeth to replace, when there is a neceſſity for it, thoſe which the viper loſes from time to time. The laſt and ſmaller teeth he thinks are certainly not employed in biting; but are intended to draw nearer to the throat, and to hold firmer the animal the viper has already ſeized.

After his obſervations on the teeth themſelves, he next makes ſome remarks on the yellow liquor that flows from the tooth of the viper. The ſingular ſtructure of the canine teeth is a powerful perſuaſive of its being from them that the yellow liquor flows. To be aſſured of this circumſtance, Mr Fontana bound the head of a viper which he had juſt killed to a table. He gently compreſſed the palate with a blunted iron; and he immediately ſaw at the elyptical hole at the point of the tooth, a yellow coloured fluid, lightly tranſparent, which firſt formed itſelf into a drop, and then glided along the external ſur-

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face of the tooth. He afterwards closed the small opening with wax, and then compressed the palate, but not a particle of the venom showed itself. He was likewise able, although with difficulty, to close the hole at the basis of the tooth with wax, and could never then force a drop of venom from the point. This yellow liquor, gliding along the tooth of the viper when alive, imperceptibly fills the sac at its root; which led Redi into an error on this subject, who supposed that bag to furnish this fluid.

Having refuted this opinion of Redi, he next inquires into the part where the reservoir of this yellow fluid is seated. Having observed a small hole placed at the anterior part of the maxillary bone, within the sheath and at the side of the basis of the canine teeth, he endeavoured to introduce into it a very fine fox's hair, and at length succeeded in passing it quite a-cross the sheath by a long membranous conduit into a small vesicle, placed beneath the muscles of the upper jaw on its lateral part. This he describes as being a membranous bag of a very strong and close texture, which is again partly covered by

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tendinous fibres. Its ſhape is nearly that of an equilateral triangle. This veſicle is three or four lines in length, and two at moſt in breadth at its baſis. It never contains more than four or five drops of the venom, which is forced from it chiefly by the action of a ſtrong muſcle covering it for almoſt the whole of its length. He concludes, that this muſcle is principally intended to force the venom from its reſervoir, becauſe it is faſtened to each jaw in ſuch a manner as to be of little uſe to the animal in cloſing its mouth. Mr Fontana lays it down as a certain concluſion, that the poiſon flows from the point of the tooth, and not from the bag, whether the viper cauſes it to flow in biting, or whether a compreſſion is intentionally made on the veſicle mentioned above.

The experiments made by Mr Fontana agree perfectly with thoſe of Redi and Mead, in demonſtrating that the yellow fluid diſcharged from the tooth of the viper, when introduced into the blood by the medium of a wound, is the cauſe of death: and he expreſſes his ſurprize that ſome celebrated writers ſhould have continued to perſuade them-

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ſelves, that the mortal effects from the bite of the viper are to be attributed to the rage of the animal, and to the power of the exalted ſaliva. He has found, from deciſive experiments, that neither the foam, nor the other humours of the viper's mouth, are capable of cauſing death when introduced into the blood by the medium of a wound; while, on the other hand, the yellow fluid mentioned above, taken from an animal put to death in the moſt tranquil ſtate, and even after the head had been almoſt dried, invariably killed animals when applied in a ſimilar manner.

From a ſeries of ingenious and convincing experiments, our author concludes, contrary to the opinions of Dr Mead and others, that the poiſon of the viper is not deleterious to its own ſpecies. He has found alſo, that there are ſome other ſpecies of animals which are not affected by this poiſon. This particularly holds with reſpect to the leech, to the ſnail, and to ſeveral other ſpecies of ſnakes which are not of a venomous nature, as the aſpic, the cecilia, and the adder. This poiſon appears alſo to have at leaſt but very little effect upon the turtle. But he found that it uni-

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verſally killed every animal of warm blood on which he made any trials.

It has been maintained by many, that the poiſon of the viper is an acid: And Dr Mead alleges, that in his experiments it changed the blue colour of turnſole to red. Others have pretended that it is an alkaline. But the experiments with which Mr Fontana here preſents us, afford inconteſtable proof that no ſalt, either acid, alkaline, or neutral, exiſts in this fluid. He has alſo found, that when taken into the mouth, even in an undiluted ſtate, it has no determinate taſte, but ſomewhat reſembles the almoſt inſenſible flavour of the freſh fat of animals. From more than an hundred trials, he found that it had never any effect upon the tongue, either in exciting ſwelling, pain, or inflammation. He has alſo applied it to the eyes, the noſe, and other very ſenſible parts of a great variety of different animals, without being able to diſcover that they ſuffered even the ſmalleſt inconvenience from it. And, from the avidity with which it was ſwallowed by dogs, who never failed to lick their lips after it, and to manifeſt ſigns of the greateſt ſatisfaction, he concludes,

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cludes, that it is even highly agreeable to the taſte of theſe animals.

From Mr Fontana's experiments, the poiſon of the viper appears to be heavier than water; in this reſpect differing from oils and animal fats. And it alſo appears to have no more inflammability than moſt other animal fluids; and in this it reſembles the poiſon of the bee, the waſp, the hornet, and the ſcorpion, which all conſume and dry in the fire without kindling into a flame. He has found, that the poiſon of the viper preſerves its activity in the cavity of the tooth even for ſeveral years. For if the tooth be put into warm water, the poiſon is ſoon diſſolved, and is capable of killing animals. Thoſe impoſtors who, to demonſtrate the power of certain antidotes, allow themſelves to be bit by vipers, effect this by previouſly ſtopping with a certain paſte thoſe holes in the teeth through which the poiſon ſhould paſs. After relating the experiments which demonſtrate theſe facts, our author endeavours to ſhow that the injury done by the leech and ox-fly, depends entirely upon the wound inflicted, and not upon any poiſon introduced.

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Our author concludes the firſt part of the treatiſe with an inquiry into the cauſe of the death of thoſe animals who are killed by the poiſon of the viper. Here he diſtinctly ſtates, and ſucceſsfully refutes, a variety of opinions which have been propoſed on this ſubject. And he obſerves, that if we reflect on the effects of opium, its mode of action may in-inſtruct us a little on that of the poiſon of the viper. That vegetable juice begins by rendering an animal weak and torpid, and kills by deſtroying the irritability of the muſcular fibres. The ſymptoms and accidents which follow the bite of the viper do not differ eſſentially from theſe, and may lead to the ſuſpicion that its poiſon kills by totally deſtroying the irritability of the fibres. This ſuſpicion he endeavours to confirm by a variety of obſervations made on frogs bit by vipers. And he thinks that, from theſe obſervations, it is almoſt impoſſible to deny, that the poiſon of the viper deſtroys irritability, by conveying a putrefactive principle into the fleſh of animals that have been bit, and into their fluids.

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In the ſecond part of this work, Mr Fontana, after ſome general obſervations on the ſources of error, proceeds tc examine whether the volatile alkali be, as ſome have alleged, a certain remedy againſt the bite of the viper. For this purpoſe, he firſt made experiments on a dozen of ſparrows, each bit by a ſingle viper, and only once. From theſe experiments, of which we cannot here pretend to give a detail, he draws the following concluſions: 1*ſt*, That the vipers he employed were ſufficiently provided with venom to kill ſparrows. 2*dly*, That as ſoon as the poiſon is introduced into the limb of the animal, it ſwells in a ſenſible degree, changes its colour, and becomes ſomewhat livid. 3*dly*, That there is no certainty of the introduction of the poiſon, from the viper ſeizing an animal between its teeth and cloſing its mouth. 4*thly*, That the fluid volatile alkali does not preſerve the lives of the ſparrows bit by the viper. 5*thly*, That the volatile alkali given internally to ſparrows previouſly bit, is probably even hurtful to them; or at leaſt their more ſpeedy death leads to this ſuſpicion. From a very great number of experiments made on pigeons,

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he concludes: 1*ſt*, That other circumſtances being equal, the larger the viper the more violent the diſeaſe, and the more ſpeedy the death. 2*dly*, That the diſeaſe increaſes in violence in proportion as the viper is more enraged. 3*dly*, That it increaſes in proportion to the time the viper compreſſes between its teeth the animal it has bit. 4*thly*, That the diſeaſe of the part bitten ſeems to be greater in proportion to the time that the pigeon ſurvives. 5*thly*, That in ſome animals black and livid blood flows from the wound as ſoon as it is made. 6*thly*, That in others, on the contrary, it flows red, and preſerves that colour. 7*thly*, That the animals from which the red blood flows die later than thoſe from which it flows black and livid. 8*thly*, That ſometimes with the blood the poiſon alſo flows out, preſerving its colour and qualities. In this caſe, the animal not only ſometimes ſurvives, or dies at a later period, but ſometimes even appears to have ſuffered no injury. He found, from a very great number of experiments on pigeons, that the volatile alkali had no effect in recovering them when bit by a viper; but it did not appear

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whether it was hurtful or not. From a number of experiments on fowls, he found, that in general they die much later than pigeons; and that the volatile alkali is not only of no uſe, but that it is probably even hurtful to them.

After having been ſatisfied from theſe experiments, of the inefficacy of the volatile alkali with birds, he next reſolved to make ſome experiments on quadrupeds; and for this purpoſe he employed guinea-pigs, rabbits, cats, and dogs. From theſe experiments he thinks there can be no doubt of the inefficacy of the volatile alkali to theſe animals: On the contrary, inſtead of diminiſhing the diſeaſe, it ſeems to ſtrengthen and increaſe it. He concludes this ſubject by relating the experiments he made on animals of cold blood; and for this purpoſe he employed frogs. From theſe alſo he thinks there can be no doubt of the inutility of the fluid volatile alkali. It is highly probable that, when given internally to frogs, it increaſes the diſeaſe cauſed by the venom inſtead of diminiſhing it: for it is certain that then the animal dies ſooner.

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It was found from a number of experiments, that the firſt and ſecond bites of a viper were nearly equal with reſpect to their deleterious effects; but that the effects of future ones were evidently leſs conſiderable: and our author concludes, that the bite of a viper when enraged is more dangerous, only becauſe it then forces its teeth deeper into the animal; becauſe it keeps them there for a longer time; and becauſe, without letting go the part that is bit, it continues to compreſs the veſicle containing the poiſon. Thus the bite of a viper enraged may be conſidered as equal to a ſucceſſion of bites from one in a different ſtate. He next endeavoured to determine, if the diſeaſe would be equal, whether different parts were bit by a viper, or a ſingle part an equal number of times. And he found that the animal dies ſooner when bit a certain number of times in two parts, than when the ſame number of bites is confined to one; but that in this caſe the ſingle part bit is ſubjected to a much more violent topical diſeaſe.

It was but natural to imagine, that the effect of the poiſon of the viper would be conſiderably

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ſiderably varied when acting on different parts of the body. It is well known that an animal is formed of organs and parts differently organized. There are parts that have veſſels and nerves without having muſcles, and theſe are in different portions and differently diſtributed ; there are others again that have no nerves, and, if they have any veſſels, have only a very few fine capillary ones. From the variety thence ariſing, the ſame quantity of venom conveyed into a wound made in an animal, might produce either death, a ſlight diſeaſe, or no diſeaſe at all. To throw light on this important ſubject, Mr Fontana performed a very great variety of experiments. The limits of our work will hardly permit us to give even the reſult of all theſe ; but we ſhall briefly mention ſome of the principal. From experiments on the ſkin, he found that the poiſon, by its action there, is not mortal, and that the diſeaſe is confined to the part of the ſkin touched by the poiſon. This poiſon appeared alſo not to be mortal when it penetrated no farther than the adipoſe membrane ; and it alſo appeared, that when ſimply applied to muſcular fibres, it is innocent ; but

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if the muſcles bleed even a little, death is the conſequence.

After a variety of experiments, ſhowing the effect of this poiſon when acting on the breaſt, the belly, the inteſtines, the liver, the ears, the pericranium, the bones, the brain, the marrow, the cornea, the comb and gills of fowls, the neck, the noſe, and various other parts, for which we muſt refer our readers to the work itſelf, he beſtows a whole chapter in endeavouring to aſcertain the influence of this poiſon on the tendons: and from a number of deciſive experiments, he concludes, that a tendon is not ſuſceptible of the action of this poiſon; but that when a tendon is completely ſtripped of its tunic, the animal almoſt invariably dies without the action of any poiſon.

The third part of this work, Mr Fontana conſiders as particularly intereſting, ſince the experiments tend, he thinks, to throw light on the nature of the poiſon. Although we are not, perhaps, he obſerves, permitted to know what the nature of the poiſon of the viper is, which when introduced into a living animal cauſes its death, we may yet, he obſerves,

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ferves, inquire into the quantity of this poifon which is neceffary to kill an animal of a certain fize. From a number of experiments, he concludes, that the thoufandth part of a grain of this poifon introduced immediately into the mufcles by an incifion, may be fufficient to kill a fparrow, although this animal does not always die from the introduction of fuch a quantity: and he concludes alfo, that it requires about four times as much to kill a pigeon, and, in order to be certain of the effect, fix times as much. The fparrows on which he made his experiments weighed fomewhat lefs than an ounce each, and the pigeons fomewhat more than fix ounces each. Judging of the quantity requifite to kill other animals in the fame proportion, he infers, that it will require about twelve grains to kill an ox of a moderate fize, and about two grains and a half to kill a man.

Mr Fontana's next experiments were made with the view of determining the time requifite for the effects of the poifon of the viper to become obvious. For this purpofe, he thought it firft neceffary to obferve thofe changes which the poifon would occafion

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when introduced into a part cut from an animal, but ſtill warm and palpitating; and from repeated trials, he found, that on parts even in this condition it produces no ſenſible change whatever: Nay, although the part was not removed, but left connected by the bone alone, the bite of a viper in parts below produced no effect. From this he concludes, that the poiſon of the viper does not act by a ſimple mechanical motion, or by a ſimple mixture of fluids; nor does its action depend on an effect in chemiſtry, ſuch as is brought about, for example, by the contact of an acid with an alkaline.

To determine the time required by the poiſon of the viper to produce its effect after being introduced into a wound, he cut off the legs of pigeons at different periods after they were bit. From theſe experiments, it evidently appeared, that the action of the poiſon on the part bitten is not inſtantaneous, but that from fifteen to twenty ſeconds is required in order to give manifeſt tokens of diſeaſe. His next inquiry was to determine, whether the death of animals bit by the viper be occaſioned by the local diſeaſe, or by a diſorder excited

excited in ſome of the moſt eſſential principles of life: and from amputating the legs that have been bit, at different periods after the bite, he concludes, that pigeons die, independently of the local diſeaſe, by an interior derangement ſpeedily communicated to the whole ſyſtem. He alſo found, that this internal derangement, as well as the local affection of the part bit, is not inſtantaneous, but that the former, as well as the latter, requires from fifteen to twenty ſeconds for its production; and that the ſooner the part bitten is amputated, the later the death of the animal occurs, if it occurs at all. Hence, then, it appears, that theſe two diſeaſes accompany each other, and that the venom produces both within the ſame ſpace of time. With reſpect to the local diſeaſe, Mr Fontana imagines, that all the efforts made by an animal which has been bit by a viper are directed to the diſcharging of the blood and humours that are affected by the noxious principle which the latter conveys by its poiſon, and to throw them off as much as it can on the part that has been bit. And, from attending to the local appearances which take place in ſome of

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of thofe cafes where animals recover, he was ftill farther confirmed in his opinion, that the local difeafe is not a mechanical effect of the introduction of the venom into the part, but is rather the means which the vital principle employs to drive towards the exterior parts the morbific humour that circulates in the fluids, and to relieve from it thofe organs which are moft effential to the prefervation of the animal.

From a very great variety of experiments made with the view of determining the action of the poifon of the viper, on the nerves of animals, and on their blood, of which we cannot here pretend to give even an abridged view, Mr Fontana concludes, that the poifon of the viper is a fubftance perfectly innocent to the nerves; that it does not occafion in them any fenfible change; that they are not even a means of conveying its influence to the animal; and, in fhort, that the nervous fyftem does not more concur in the production of that difeafe, than the tendons, or any other infenfible part of the animal. On the other hand, from all his experiments on the blood, and particularly from the injection of the

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the poiſon into the blood-veſſels, he concludes, that the action of this poiſon is immediately exerted on the blood itſelf. This fluid, he obſerves, is alone changed by the poiſon; this fluid conveys the poiſon into the animal, and diffuſes it over the whole body. The action of the poiſon on the ſyſtem, and its effects on the blood, are almoſt at the ſame inſtant. The colour of this fluid is ſuddenly changed; it loſes that redneſs which is natural to it, and becomes ſuddenly black and livid. To this firſt effect, there ſoon ſucceeds a ſecond; the blood is very quickly coagulated, particularly in the lungs, in the auricles of the heart, and in the heart itſelf. But the whole maſs of blood is not, he obſerves, coagulated in the animal; a part of it appears even in a diſſolved ſtate. The red and glutinous parts alone form the coagulum; the ſerous part is even more fluid than before. And if the coagulated part be left for ſome time in water, it loſes the black colour it had contracted, depoſites the red part, and leaves a tenacious white fibrous ſubſtance ſimilar to a polypus.

The blood, partly coagulated and partly diſſolved, muſt produce very violent diſorder in

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in the animal. The part bit by the viper ſwells very ſpeedily, and becomes by degrees livid. The ſerous part tranſudes into the cellular membrane, which it entirely fills. Almoſt inſtantly after the injection of the poiſon into the jugular vein, the blood coagulates in the lungs; the veſſels of which are filled and diſtended with this fluid in a black and coagulated ſtate. In ſhort, the circulation is totally interrupted, and the animal dies.

When Mr Fontana wrote the firſt part of this work, he was of opinion that the poiſon of the viper acted immediately on the irritability of the muſcles; and that the animal died from the loſs of irritability in its fibres. But future experiments have ſatisfied him, that the deſtruction of irritability is rather an effect than a cauſe, being only a conſequence of the change cauſed in the blood by the poiſon. That fluid, partly diſſolved and partly coagulated, is diſpoſed to a ſpeedy putrefaction; and being pent up in the veſſels, corrupts and decompoſes whatever it meets with.

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In this manner he ſuppoſes it is that animals of warm blood die from the bite of the viper: But in cold animals the caſe is not the ſame. Theſe, as frogs, may live a certain time without the circulation of the blood, and without reſpiration. It is entirely, he thinks, on this account that the poiſon of the viper operates upon them with leſs activity than on warm animals, and that, in proportion to their ſize, they ſurvive longer. This conſequence naturally reſults from the principle of life in them being leſs intimately connected with the circulation of the fluids.

In the fourth part of this treatiſe, Mr Fontana enters upon an examination of different remedies employed againſt the bite of the viper. From a very great number of experiments, he was fully aſſured of the inefficacy not only of the volatile alkali, but alſo of the moſt active acids, the vitriolic, the nitrous, the phoſphoric, and the like. He tried alſo cantharides, Peruvian bark, deep ſcarification, the actual cautery, theriaca, the fat of the viper, the application of leeches, ſucking the part bitten; but without being able to obtain the deſired effect. On the contrary, ſome

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of them were evidently attended with bad conſequences. Having obſerved that dogs and cats recovered with greater facility in proportion to the violence of their vomiting, he was led to make trial of emetics. Several of his experiments were ſo far favourable, that he cannot take upon him to aſſert that tartar emetic is entirely uſeleſs; but it is certainly, he obſerves, no infallible remedy. Plunging the part that had been bit into warm water, and keeping it there, appeared to be truly advantageous: And although not a certain remedy, it is always, he obſerves, attended with a greater or leſs degree of advantage. Amputating the part bit, if performed ſufficiently early, was always effectual; and the ſame conſequence was alſo obſerved in a variety of experiments with pigeons, merely from putting a ligature round the limb, and keeping it there for ſome time.

On the uſe of ligatures round the limb that has been bit, as a means of combating the poiſon of the viper, a great number of additional experiments are related in the ſucceeding chapter; in which Mr Fontana propoſes to conſider whether the bite of the viper be

naturally fatal to man. For a confiderable time after he had made thefe experiments, fhowing the good effects of the ligature, he was ignorant that it had been employed or recommended by any other practitioner. But he at length found that it had been mentioned by the celebrated Koempfer. By that author, however, feveral things are defcribed as equally neceffary. He begins by directing a ligature above the part bitten; but he has then recourfe to fcarifications, to fqueezing the blood from the wounded part, to covering it with theriaca, and to the internal ufe of fudorifics. Hence it was impoffible to fay what good may have been obtained from each. But from the experiments here related, made on fowls, guinea-pigs, rabbits, and other animals, bit by vipers, where the ligature alone was employed, the advantages of this practice are abundantly manifeft. Hence he infers its utility with the human fpecies. The application of common oil, at one time much celebrated in England, he confiders as being in reality of no ufe. But he has no doubt in afferting, that the bite of the viper is by no means abfolute-

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ly mortal to the human ſpecies. He is of opinion, that thoſe have been much miſtaken who have regarded the diſeaſe cauſed by the poiſon of the viper as one of the moſt dangerous, and from which it is impoſſible to recover. On the contrary, he thinks that of an hundred men, bit, each of them once, by a ſingle viper, either in the foot or hand, parts uſually expoſed to the bite of this animal, not one of them would probably die, even although no remedy were employed.

To theſe reſearches, during which Mr Fontana had performed more than ſix thouſand experiments, he ſubjoins an appendix; in which he particularly examines another remedy lately highly celebrated againſt the bite of the viper. While he was in London, a treatiſe was publiſhed in Italy on the efficacy of an alexipharmac againſt the poiſon of the viper, by the Abbé de Tecmeyer. In this treatiſe it is alleged, that calcined hartſhorn is a certain remedy; and that applied under the form of cobras ſtones, as they have been called, it had performed miracles. Mr Fontana made a variety of experiments, not only with different pieces of hartſhorn prepared in the

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the manner directed, but alſo with one of theſe ſtones brought from Italy and prepared by the Abbé de Tecmeyer himſelf. But the reſult of theſe trials fully demonſtrated the inefficacy of this ſo-much boaſted mode of cure.

After theſe reſearches on the poiſon of the viper, the work before us next contains a diſſertation on the American poiſon called Ticunas, and on ſome other vegetable poiſons. When Mr Fontana arrived in London, the learned and ingenious Dr Heberden not only procured him a great number of American arrows, well preſerved and well covered with the poiſon, but alſo obtained for him a conſiderable quantity of the poiſon itſelf. It was put into his hands incloſed and ſealed in an earthen jar, the caſe of which ſtill remained unopened: within the caſe there was a paper, on which was written the following words: "Indian poiſon brought from the banks of "the Amazons by Don Pedro Maldonada." There are two remarkable kinds of Indian poiſon, pretty nearly of the ſame activity; the one called Lama, the other Ticunas. And the poiſon contained in this jar was of the latter

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latter kind. He was not certain with which of these the poisoned arrows given him were prepared: But finding by experiment that it had nearly the same strength with the ticunas, he thought it needless to distinguish the one from the other.

With this poison Mr Fontana performed many experiments. Notwithstanding what had been advanced respecting the activity of the vapour arising from it, yet he found that the vapours arising even from the smoke of this poison are innocent, whether smelled or inhaled. This poison was, he found, readily and perfectly dissolved in water, even cold, and also in mineral and vegetable acids. It neither effervesced with acids nor alkalines, nor caused any kind of change on milk. It neither turned the juice of radishes red or green; nor did it, even by the aid of glasses, discover any thing regular or saline. From this he concluded that it is neither acid nor alkaline, nor composed of salts visible by the microscope. From a variety of experiments, he found that this poison has no more effect when applied to the eye than if that organ were bathed in water. He found, contrary to what happens with respect

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to the poison of the viper, that the American poison taken internally proves deleterious, but that a considerable quantity is required to kill even a small animal. By passing threads first impregnated with the poison, and then a little dried, through the skin of rabbits, guinea-pigs, and other animals, they died in a short time. And he even found death ensue, when the poison was applied to parts of the surface previously abraded, though not wounded. From other experiments, he found that the American poison, when applied to the skin slightly scratched, both in birds and quadrupeds, may be mortal, although this be not always the case.

From a series of experiments made with the view of determining the quantity of American poison necessary for killing an animal, he concludes, that about the hundredth part of a grain will kill a small animal; but that the poison must be dissolved, either to occasion death or any sensible disorder of the animal œconomy. Experiments made on the ears of animals, convinced him, that where there are but few blood-vessels, the poison either does not act or is not mortal. As well like-

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wiſe as the poiſon of the viper, he found it to be entirely innocent when applied to tendons, ligaments, or cellular membranes deprived of blood-veſſels: But the action of the poiſon when inſinuated into the muſcles was very ſudden. He found in general, that the poiſoned arrows are more deadly in their effects than the poiſon diſſolved in water, and ſimply applied to the wounded part. When the poiſon is applied after being previouſly diſſolved in the mineral acids, its effects ſeem to be deſtroyed; but rum and vinegar did not ſeem to diminiſh its influence; and even the mineral acids are both uſeleſs and dangerous when applied to the poiſoned muſcles of an animal. From the experiments which he made for determining the length of time requiſite for the action of the ticunas, he found that this poiſon requires a more conſiderable time than is neceſſary for the venom of the viper; that its effects on animals are more vague and uncertain; but that the effects of both may be remedied by ligatures round the limb, or by amputating the part when done in time. The experiments which he made on frogs, eels, adders, and particularly on vi-

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pers, led him to conclude that the American poiſon, as well as the poiſon of the viper, is totally innocent to animals with cold blood. A ſolution of the ticunas mixed with blood drawn warm from an animal, prevented its coagulation; nor was the blood found coagulated in the large veſſels of animals killed by it, in place of that almoſt general coagulation ariſing from the poiſon of the viper. But when introduced into the blood by injection into the jugular vein, it inſtantly produced death. From his experiments on the nerves, he lays it down as a certain fact, that the ticunas does not act on theſe, but acts entirely on the blood. From ſome experiments which Mr Fontana made with poiſoned arrows from the Eaſt Indies, they ſeemed to differ only from the American poiſon in having leſs activity.

After having treated of the American poiſon, Mr Fontana next adds ſome obſervations on the laurocerаſus, the laurel bay, the *Prunus Laurocerаſus* of Linnæus. This, he obſerves, does not yield to the moſt active, producing violent convulſions and death. On diſtilling a great deal of water from a few of the

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the leaves, he found it to be quite innocent. If indeed it be repeatedly diſtilled, even from the ſame leaves, it becomes more active, but does not induce death. But if, inſtead of adding water to the leaves, the diſtillation be made in balneo mariæ, the liquor that runs off is a very ſtrong poiſon, and very ſudden in its effects. This poſſeſſes ſuch a degree of activity as to kill in a ſmall doſe in the ſame way with the ticunas. When it is either taken into the ſtomach or introduced into the body by injection, its action is ſo ſudden that the animal inſtantly gives ſymptoms of pain, ſoon ſucceeded by convulſions and death. Two tea-ſpoonfuls of it taken internally, will kill a middle ſized rabbit in a minute.

Two or three tea-ſpoonfuls of this water applied to a cut in the belly of a guinea-pig, produced convulſions in leſs than three minutes, and ſoon after the animal died. The laurocerafus water, however, Mr Fontana tells us, acts invariably with greater quickneſs and force, when taken internally even in ſmaller quantities. When ſwallowed, it not only ſuddenly kills animals of warm blood, but alſo thoſe of cold blood. Taken in this way,

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as it killed every animal on which Mr Fontana tried it, he doubts whether any of them be capable of reſiſting it; and if this be the caſe, he thinks it ought to be diſtinguiſhed as the moſt terrible of all known poiſons, from its univerſal faculty of deſtroying every ſpecies of animals.

Finding it thus an active poiſon when applied to the ſtomach, he determined to try its effects when immediately applied to the nerves, and when introduced into the blood without touching the parts that are cut. From its application to the ſciatic nerves laid bare and wounded, it appeared, that in whatever way it be applied, whether immediately to the nerves, or even introduced into their medullary ſubſtance, it has no action on them either as a poiſon or otherwiſe. Contrary to what happens with the poiſon of the viper and the ticunas, the water of the laurocerafus when injected into the blood-veſſels, produced no effect whatever.

The experiments demonſtrating theſe facts were made by Mr Fontana in London, and an account of them was publiſhed in the philoſophical tranſactions. But after his return

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to Florence in the year 1780, he inſtituted freſh inquiries on this ſubject. In diſtilling the leaves in glaſs retorts, without adding water, he obtained what has been called the ſpirit. This ſpirit was tranſparent, fragrant, and poignant to the taſte; and at the bottom of the receiver there was a quantity of heavy, coloured, odoriferous, oil. Theſe he carefully ſeparated; and he tried different experiments both with the ſpirit and oil, not only of the firſt but alſo of the ſecond and third diſtillations, as well as with the reſiduum or phlegm which remained in the retort on the fluid being rediſtilled. Theſe articles were tried by being ſwallowed, by being applied to tender parts, as the eye, the mouth, &c. and by being applied to recent wounds. From theſe experiments, it appears that the ſpirit of the laurocerafus is a very active poiſon, and that it produces this effect even when it is almoſt entirely deprived of its ſmell and pungent taſte; that its oil is alſo a poiſon, though leſs active than the ſpirit, ſince accidental circumſtances and diverſity in animals are ſufficient to prevent its noxious effects; but that it kills an animal with cold blood much quick-

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er than one with warm blood. It appears alfo that this poifon, when fimply applied in very fmall quantity to the eyes, or to the inner part of the mouth, without touching the œfophagus, or being carried to the ftomach, is capable of killing an animal in a few feconds; while again, although applied in much greater quantity to wounds, it has fo little activity, that the weakeft animals, fuch as pigeons, are capable of refifting its action.

Mr Fontana next relates fome experiments made on the toxicodendron, or poifon tree as it has commonly been called. This fome celebrated writers have regarded as a very ftrong poifon, while others have held a contrary opinion. He found that both the juice and milk of the leaves are quite innocent to different animals, both when applied externally, when taken internally, and even when applied to wounds; but that a very fmall portion of the milky juice applied to the human fkin, produces remarkable fymptoms even on very remote parts. Indeed our author foon abandoned his inquiries on this fubject, having had the misfortune to poifon himfelf three times fucceffively with the leaves of it.

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He ſlightly touched the back of his hand with a leaf of the toxicodendron, which he had cut near the ſtalk. It was with difficulty he could afterwards perceive the ſkin to be wet at the place where he had applied it. But three days after there appeared a dark ſpot, and in three days more his whole face began to ſwell, particularly the eye-lids and tips of the ears. He felt a ſevere burning for fifteen days, and an intolerable itching for fifteen more; and his hands were covered in different places with ſmall veſicles filled with a tranſparent ſharp humour. He had no fever, but his pulſe was very quick. Nearly the ſame ſymptoms occurred on two other occaſions, when he merely touched the leaves with his fingers, and that too at parts where they had not been cut, and where there could be no ſuſpicion of milky juice.

To the experiments on the toxicodendron are ſubjoined ſome made on the oil of tobacco. He made a ſmall inciſion in a pigeon's leg, and applied to it the oil of tobacco. In two minutes it loſt the uſe of its foot. He applied it to a wound in the pectoral muſcles of another pigeon; in three minutes the animal

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mal could no longer ſupport itſelf on its left foot. Two other pigeons, to the muſcles of which he applied the oil of tobacco, vomited all they had eaten. He obſerved this vomiting to be the conſtant effect of the oil. But he conſidered the loſs of motion in the lower part of the extremity to which it was applied to be merely accidental. And not one of the animals died in conſequence of the application.

After ſome obſervations on the ſtructure of the nerves, of the brain, tendons, muſcles, &c. which, as being almoſt entirely deſcriptive, do not admit of abridgment, the work is concluded by an appendix, containing an account of additional experiments made on ſeveral of the poiſons formerly treated of, particularly on the laurocerafus. From theſe experiments it appears, that the oil of this vegetable, when taken internally, is a poiſon to vipers and ſnakes; that it kills theſe animals when ſimply applied to their muſcles; that it has the ſame effect on pigeons, both when applied to muſcles and alſo when applied to the eye; that when applied to the heart, it ſoon renders that organ motionleſs; that

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when applied to the brain or nerves, it deprives theſe organs of the faculty of contracting muſcles when ſtimulated; that it deadens the part of a leech to which it is immediately applied; that it kills rabbits and other animals when injected into the jugular vein: And, in contradiction to the experiments which he had before made in London, he found that the ſpirit of lauroceraſus properly prepared by three diſtillations, when injected into the jugular vein of a rabbit, to the extent of about fifty drops, killed it almoſt inſtantly. Having opened the thorax, he found the lungs quite ſpotted; the ſpots were very ſmall, and reſembled ſo many dots of a darkiſh red colour. The blood appeared to be viſcous, and as having ſtagnated in the veſſels; and the blood in the heart was of a tenacious conſiſtence and black colour. This experiment was repeated ſeveral times with nearly the ſame reſult. In one caſe, the animal died immediately on the injection of the liquid.

From theſe experiments Mr Fontana concludes, that there can be no doubt that the ſpirit of lauroceraſus, when exhibited in ſufficient

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ficient doſes, and rendered ſufficiently active by rediſtillations, is a violent poiſon when introduced into the blood by the jugular vein. Hence he infers, that it cannot, as he once imagined, be conſidered as an exception to the law he had eſtabliſhed of other poiſons; which, when introduced immediately into the blood, without touching either the nerves or the wounded ſolids, kill in an immediate way, and in a few moments after bringing on convulſions. He thinks, therefore, that it is not only abſurd to have recourſe to the nerves for explaining the action of this poiſon, but that this imaginary hypotheſis is entirely ſuperfluous, ſince its effects upon the blood are thus manifeſt.

The laſt article of which Mr Fontana treats is opium. There are few ſubſtances with reſpect to the powers of which more oppoſite opinions have been entertained: And when we reflect that it is a ſubſtance daily employed by medical practitioners, it will readily be admitted, that the aſcertaining truth is here truly intereſting. Mr Fontana long imagined that many miſtakes had ariſen from exhibiting opium diſſolved in ſpirit of wine;

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the effects attributed to it, being in reality consequences of the ardent spirit. He therefore made many experiments, contrasting the effects of ardent spirit alone with those of opium dissolved in this fluid, and dissolved in pure water. From many experiments made on guinea-pigs and other animals, by giving it internally, by injecting it into the anus, by injecting it into the cavity of the abdomen, and by injecting it into the cellular membrane, he found that opium simply dissolved in water kills animals of warm blood; but that when dissolved in spirit of wine, its effects are much quicker and more violent. This, however, he concludes to proceed from the spirit itself; since this fluid, when exhibited alone, produces all those effects more violently and quickly than when the opium is dissolved in it.

He next tried several experiments on animals of cold blood, particularly leeches, turtles, and frogs. Leeches immersed in all these fluids died in a very short time. And he found, that when only one half of the leech, whether the head or tail half, was plunged into the fluid, that half alone died.

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From his experiments on turtles, he found that opium taken by the mouth, though diſſolved merely in water, acts violently on theſe animals; but that its action is trifling when compared to that of ardent ſpirit. The action of the aqueous ſolution when injected into the rectum, though manifeſt, was alſo much leſs conſiderable than that of ſpirit of wine. And this was likewiſe found to be the caſe when theſe fluids were injected into the cellular membrane beneath the ſkin. From experiments made on the hearts of turtles, it appeared that a ſolution of opium in water has no immediate action on that organ, contrary to what had been ſuppoſed by almoſt every preceding obſerver. From his experiments on frogs, he could not affirm with certainty that the aqueous ſolution of opium taken by the mouth kills them in a ſhort time; but they were killed by this fluid injected beneath the ſkin, although not ſo ſpeedily as by ſpirit of wine. From immerſing the hearts of frogs taken from the body into ardent ſpirits, ſpirituous ſolutions of opium, aqueous ſolutions, infuſions of the Peruvian bark, and

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pure water, in which experiments he employed upwards of fifty hearts, the conſequences which he obſerved were diverſified and very inconſtant; but he ſaw no ground for concluding that opium has any real action on the hearts of theſe animals when applied in this manner.

He next relates a new ſet of experiments which were tried with the view of determining whether opium acts upon the nerves. And from its application to the brain itſelf, to the crural nerves laid bare, and to the crural nerves detached from the vertebræ, in the courſe of upwards of three hundred trials, he concludes with the moſt poſitive certainty, that the circulation of the blood in the machine is the vehicle for opium; and that without this circulation it could have no action on the living body; opium, when made to act upon the nerves alone, producing no more change than ſimple water, in whatever way it be applied to the nerve; whether the nerve be cut or entire; whether it be covered with its proper coats and ſheaths; or whether the medullary pulp itſelf be put in contact

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with the poiſon. His next experiments were made by injecting an aqueous ſolution of opium into the blood-veſſels of rabbits. From theſe he found that opium injected into the veins produces heavineſs, convulſions, and at length death; that wine has nearly the ſame effects; that ſpirit of wine diluted with water produces heavineſs and convulſions; and that if it be rectified it kills in an inſtant. He found the blood congealed in the cava, in the auricles, in the right ventricle, and in the lungs; which, he obſerves, are ſure cauſes of death, without having recourſe to the nerves.

It is, we apprehend, unneceſſary for us to recommend to our readers, particularly thoſe engaged in actual practice, a due degree of attention to the reſult of Mr Fontana's experiments on this ſubject. It has of late been but too faſhionable for phyſicians to attribute every thing to the nerves, and to pay no regard whatever to the circulating fluids; and from the experiments above related, it would appear with but little truth. Our author, however, obſerves, that ſeveral ſkilful phy-

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ficians have frankly acknowledged to him, that his experiments render the nature of nervous difeafes in general very fufpicious. And it is certainly much to be regretted, that of late this term has often been employed, not merely as a cloak for ignorance, but as a bar to future inquiry.

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III.

Obſervationes Medicinales de Febribus Intermittentibus, et qua ratione eiſdem medendum eſt. Opus quod Scientiarum Artium atque Literarum Societas Divionenſis præmio coronavit. Auctore Carolo Strack, *M. D. et in Univerſitate Moguntina Praxeos Medicæ et Collegii Clinici Prof. Or. &c.* 8vo, Offenbach.

THOUGH few affections more frequently preſent themſelves to medical practitioners than fevers of the intermittent kind, yet there can be no doubt that practitioners are ſtill much in the dark with regard to many particulars reſpecting them. With the view of obtaining a farther illuſtration of the nature of theſe fevers, and a certain knowledge of thoſe marks pointing out the particular ſtadia of theſe fevers during which medicines may be exhibited with greateſt advantage and with perfect ſafety to the pa-

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tient, the academy of Dijon propofed an inquiry refpecting them as the fubject of a prize-differtation. That prize was adjudged to a treatife written by Dr Strack profeffor at Mentz. As we have not had an opportunity of obtaining the original, we fhall here prefent our readers with an analyfis of it, extracted from the Leipfic Commentaries.

This treatife is divided into three books. In the firft of thefe, the author treats of the nature of intermittent fevers; in the fecond, of the method of cure; and, in the third, of the different uncommon forms which they put on.

The author confiders a peculiar miafma as the only caufe of all intermittent fevers. Thefe are diftinguifhed by different acceffions, according to the condition of the body which is attacked. Thus, with one depraved ftate of the habit, a quotidian, with another a tertian, and, with a third, a quartan is produced. He is led to adopt this opinion, from obferving that the fame intermittent fever, during its courfe with a patient, will affume different types; that all intermittents very much refemble each other, both with refpect to the

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ſymptoms of the paroxyſm and the method of cure; that they all leave the ſame ſequelæ, ſuch as jaundice, tumours of the ſpleen, and dropſy. From theſe, and ſome ſimilar particulars, he concludes, that intermittent fever in general depends on its own peculiar miaſma; that although ſimple and uniform, the fever induced by it admits of different types, in the ſame manner as the fever induced by the miaſma of the ſmall-pox.

He ſuppoſes intermittent fever to take place when this peculiar miaſma acts upon a body which, by its previous diſeaſed ſtate, is fitted to receive and to cheriſh this miaſma. Thus the intermittent fever may be conſidered as formed from a depraved ſtate of the habit, and from an acute miaſma. Hence it may, he obſerves, be overcome, either by removing that morbid condition which prediſpoſes to the diſeaſe, or by expelling the miaſma itſelf; which may often be accompliſhed by purging the body from that impure colluvies in which it is at firſt ſeated.

He next makes ſome obſervations on the marks diſtinguiſhing intermittent fevers, and on the explication of their different ſtadia.

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He confiders the cold as arifing from the febrile miafmata received from fome fomes, and united to it, ftimulating the heart; in confequence of this, the whole veffels of the body, being contracted as it were by a convulfion, are ftraitned and become ftiff. Hence there arifes impeded circulation, diminifhed attrition, and extinction of heat. From this he thinks it is, that old men dying of intermittent fevers are always cut off by the cold ftage, never during the hot fit; but the matter driven through the veffels is by degrees attenuated; and if it be rendered milder, an opportunity is given to the veffels of reacting, and thus propelling the humours. Hence there arifes augmented attrition, removing the cold and inducing the hot fit. This critical perturbation, during which the patient is uncommonly agitated, induces the fweating and the difcharge of red coloured urine, depofiting a copious fediment; which, in conjunction with the fweat, conftitutes a proper crifis. How far any of our readers will be difpofed to adopt this theory of intermittents, we cannot pretend to fay. Without ftating thofe particulars which appear to us

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to be objections to it, we may only obſerve, that modern theories on this ſubject differ as much from each other as they do from thoſe of more ancient date; and it is perhaps to be doubted, whether any theory has yet been propoſed which can be conſidered as even near the truth. But fortunately theſe ſpeculations little affect either ſucceſsful practice, or even accurate obſervation reſpecting the prognoſis. And to the laſt of theſe ſubjects our author next proceeds.

It has long been the opinion of phyſicians, that a favourable criſis happens on the uneven days, and a bad one on the even ones. This opinion others have rejected as groundleſs. But our author, from his own obſervation, is inclined to adopt it: nor has he, during the courſe of twenty-four years practice, obſerved a ſingle intermittent terminating ſpontaneouſly after the ſecond, fourth, and ſixth acceſſions, although he has frequently ſeen ſuch terminations after the uneven ones. The criſis of intermittent fevers, as well as of other diſeaſes, were, he adds, much more readily obſerved by the ancients than by the moderns; becauſe the former were unacquainted with thoſe

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thofe powerful remedies by which difeafes can now be terminated without any fuch crifis.

The crifis of the febrile matter is, he tells us, that effort by which, when moved, attenuated, and concocted, it is expelled by fweat towards the conclufion of the acceffion. The fweat then occurring is copious, general, vifcid, and adhering long to the furface. It has the fmell of fermenting bread, and gives a tinge to the linens. The peculiar fetor, he fays, is a proof that this fweat contains a large proportion of the fomes: But when perfect, it muft be univerfal, and at the fame time give alleviation of the difeafe. A crifis fometimes happens by ulcers of the mouth, nofe, and tongue: But that, he obferves, is in general imperfect, not expelling the whole morbid matter, and eafily permitting a recurrence of the difeafe. Intermittents, he obferves, are not terminated either by vomiting or loofenefs, unlefs the whole febrile matter happens to be lodged in the inteftinal tube.

The method of cure in intermittent fevers is, according to Dr Strack, on one of two plans; either rational or empirical. With regard to the firft, every intermittent acceffion

ſion may, he thinks, be conſidered as a continued fever, very ſhort in its courſe: hence the proper cure is perhaps to be conducted in the ſame manner; but that cure alone will often be unſucceſsful. He alſo conſiders as doubtful that plan of cure which conſiſts in exciting a ſweat a ſhort time before the acceſſion, though much recommended by the ancients, and ſtill daily practiſed among the vulgar. He holds it therefore preferable to have recourſe to the Peruvian bark; by means of which a ſpeedy and ſafe cure may be obtained. During the cold fit, he adviſes that warm aromatic drinks be given to induce ſweat: but as ſoon as the hot fit begins, he recommends cold water a little acidulated. On the commencement, however, of the ſweating, he adviſes the having again recourſe to warm drink, as a means of ſupporting the ſweat and of ſupplying the loſs ſuſtained.

When the patient is free from the fit, he thinks that much prejudice is often done by means of purgative medicines; and he affirms, that there is nothing by which the body labouring under intermittents is more apt to be hurt than by purgatives. It muſt firſt,

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he ſays, be determined whether the matter be crude or concocted; becauſe, unleſs regard is paid to this, the bowels are only harraſſed by means of purgatives, and the diſeaſe rendered ſo obſtinate as to reſiſt the Peruvian bark. But regard is chiefly to be paid that a purgative be not exhibited on thoſe days on which a criſis chiefly happens, or in which nature makes an effort towards it; for then, he aſſerts, it is not only adverſe to the diſeaſe, but often even productive of fatal conſequences. But as he holds purging to a great degree to exaſperate the fever, ſo, on the other hand, when the matter is concocted, it is prejudicial not to evacuate the belly ſufficiently: for without this, a large quantity of the Peruvian bark will not be ſufficient to overcome the fever. Dr Strack rarely employs a purgative till after the third acceſſion; and he even reckons it ſafer to purge only after the fever is terminated.

The cure of intermittents is not, he alleges, to be attempted till after coction has taken place. The vernal intermittents eaſily admit of coction; but this, he thinks, is not the caſe with autumnal ones, from the fluids being

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ing rendered acrid by the heat, are thus unfit for concoction. Vernal intermittents, when they attack young people, when they are not conjoined with any chronic disease, and in which, after each of the three first accessions, there takes place a profuse sweat smelling strongly of acid, with morbid urine, easily admit of cure. But the contrary happens in the intermittents of old people, when the urine, in the days free from accession, is of a light, red, and transparent appearance. When the fever is brought to a state of coction, it is, he alleges, easily cured by almost any bitter. He has often completely removed such fevers by the powder of the bark of Simarouba, taken to the extent of ten grains thrice a-day. But he considers the Peruvian bark as justly intitled to a superiority; and he directs it to be given to the extent of a scruple every hour: for he thinks it best to exhibit it in small doses, which can be conveniently retained and digested in the stomach, and exert their full effect.

He contends, that the Peruvian bark, employed under the form either of vinous or watery infusion, will be of no avail; and he

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confiders all thofe evils which fome practitioners have alleged to arife from the cure of intermittents by the Peruvian bark, as being entirely groundlefs. He thinks that the frequent relapfes of intermittents, after their removal by the bark, proceeds from the medicine being laid afide as foon as a fingle acceffion is miffed. He recommends, therefore, that although there fhould be a ceffation of fever, the ufe of the bark be continued for fome time, that the whole remains of the difeafe inherent in the body may be expelled. On this he confiders the cure of the difeafe as hinging. He forbids purgative medicines from being either mixed with the bark or given after its employment: for by thefe he alleges that intermittents, when prefent, are exafperated; or, when they have ceafed, are renewed. He advifes that the bark fhould be given pure as foon as it is known that figns of concoction have taken place.

It is common, he obferves, for relapfes in intermittent fevers to happen on thofe days on which the paroxyfm would have occurred, if no fufpenfion had taken place, when relapfes happen foon after a cure. But our

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author has obferved this to happen at the end even of a confiderable time. Such relapfes always indicate that the fever has been imperfectly removed. But it is impoffible to determine by weight how much bark is neceffary for the complete removal of an intermittent. When pregnant women are attacked with intermittents, recourfe fhould be had without delay to the moft effectual remedies, that the difeafe may not be communicated to the fœtus. With them, he recommends that a large quantity of bark fhould be given, and continued for fome time after the fever feems to be completely removed.

In the fecond book, Dr Strack treats of intermittent fevers which are uncertain in their appearance, and which lurk under the refemblance of fome other difeafe; which feize the head, either affecting the whole with confiderable pain, or more efpecially occupying fome particular part. Thefe are chiefly diftinguifhed by the recurrence of the pain obferving ftated periods. But when regular acceffions do not take place, they are chiefly diftinguifhed from their being terminated by fweating, and by the appearance of the urine.

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He mentions an epidemic intermittent prevailing in the years 1749 and 1750, which appeared under the form of ſleepineſs. The cure entirely turned on the liberal uſe of the bark between the acceſſions. He mentions alſo an acute inflammation of the eyes, partaking of the nature of an intermittent fever, cured by the Peruvian bark. And he obſerved an intermittent combined with pleuritis; which, though difficultly diſtinguiſhed, yet yielded to the bark alone. It began with cold, and an acute pain of the ſide, ſucceeded by burning heat, nauſea, and thirſt. This was followed by a parched tongue, difficult breathing, watchfulneſs, and delirium; and with theſe ſymptoms ſweating occurred. On the ſecond or third day, there took place looſeneſs, agitation of the body, and a copious ſputum tinged with blood. He points out the following circumſtances as diſtinguiſhing that pleuritis which partakes of the nature of an intermittent, and is removed by the bark; a longer continued ſhivering, and greater degree of cold, than are common at the commencement of other pleuriſies; a greater degree of ſucceeding heat; copious vomiting;

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a bitter tafte in the mouth; profufe fpontaneous fweats, of a difagreeable fubacid fmell; high coloured urine, becoming turbid when cold, and depofiting a lateritious fediment. With thefe circumftances it is not relieved by any of the common remedies of pleuritis, but yields to the Peruvian bark.

In like manner, an intermittent fever may be concealed under the form of colic, cholera, arthritis, hyfteria, or even convulfions. He obferves, that boys, and plethoric young men, are chiefly liable to convulfions when attacked with intermittent fevers; and from which they are again freed when the heat begins to fubfide. Thefe are much lefs alarming than the convulfions which happen at ftated periods without any fufpicion of intermittent.

The laft difeafes of which Dr Strack treats, are thofe which fucceed intermittent fevers. Thefe either feize particular parts or affect the whole fyftem. He alleges that boys are more liable to tumour and hardnefs of the belly from intermittents than adults; and he confiders this affection as depending chiefly on enlargement of the fpleen, which he has fometimes found to occupy a very large fpace

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in the abdomen. This tumour, when large and obftinate, is, he thinks, by no means free from danger. When it admits of cure, this, he thinks, is to be effected by the Peruvian bark; becaufe its origin and increafe depends on the intermittent fever. And while neither internal aperients, nor ointments applied externally, are of any avail, by the ufe of the bark it will, he affirms, be completely refolved, if it be not of long ftanding. And he even alleges, that by long continuance of the bark, he has known very large tumours of the fpleen totally difcuffed.

If the miafma be thrown upon the liver, and lodged there, it produces a conjunction of fever and jaundice. This, however, he tells us is to be cured in the fame manner as an intermittent alone. Dropfy fucceeding intermittents is chiefly diftreffing, he obferves, to infants and to paupers. But he thinks it very erroneous to attribute, as fome are difpofed to do, thefe dropfies to the Peruvian bark. For he obferves, that when recourfe is immediately had to the bark, it either prevents the dropfy or removes what has already taken place. And he mentions many examples

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amples of dropſies ſucceeding intermittents being cured by the Peruvian bark alone.

If the menſtrual flux be deficient during the courſe of an intermittent fever, he recommends the Peruvian bark as a means of terminating the fever, and thus reſtoring the diſcharge. And when again, after the fever is terminated, the diſcharge is wanting, he conſiders the Peruvian bark as the beſt reſtorative, from expelling the remains of the fever: in the ſame manner, he alleges, that it renews the hæmorrhoidal flux, when its courſe is interrupted by a fever.

When nurſes are attacked with intermittents, their milk either fails, or in place of milk there is a ſecretion of a thin ſerum. This inconvenience is beſt obviated by medicines expelling the fever, particularly by the bark; but cannot, he tells us, be counteracted by other means. Exceſſive excretions happening from intermittent fevers, whether under the form of copious ſweats, exceſſive looſeneſs, a profuſe menſtrual or lochial diſcharge, or any other form, are, he affirms, ſucceſsfully alleviated by means of the bark; which,

when properly exhibited, reſtores the body to a vigorous and plump ſtate.

He concludes this treatiſe with conſidering the queſtion, at what period it is proper to cut ſhort an intermittent? In thoſe ſubjected to different diſeaſes, ſince the continuance of an intermittent fever is ſometimes advantageous, ſometimes pernicious, no certain rule can be given; particularly if, from the fever, there be any hopes of the removal of obſtinate diſeaſes before exiſting. But when no advantage is to be expected from it, or when other ſupervening diſeaſes appear, he adviſes that the intermittent ſhould be immediately terminated by the Peruvian bark.

Although the treatment of intermittents here recommended by Dr Strack may be conſidered as agreeing very much with that at preſent commonly adopted in Britain, yet the analyſis we have given of his treatiſe, which was crowned with the approbation of a learned ſociety, will ſerve to ſhew how far thoſe agreeing in practice ſtill differ with reſpect to their theoretical opinions in medicine.

IV.

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IV.

Die Eispflanze als ein fast specifiches Mittel empfohlen, von Dr Johann Wilkelm Friedrich Lieb. 8vo, Hofrath. i. e. *The Ice Plant recommended as a specific Medicine.*

IN this treatise, of which also we shall here present our readers with a short account, extracted from the Leipsic Commentaries, the ice plant, or diamond ficoides, the *mesembryanthemum crystallinum* of Linnæus; an article which, as far as we know, has not hitherto been recommended by any medical writer, is highly extolled as a medicine of peculiar efficacy. Dr Leib, the author of this essay, affirms, that he has never employed it without the most immediate success, and that it put an instant period to some very distressing complaints.

He considers it as acting chiefly upon the bile, and upon all diseases of the bladder and

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urinary paſſages. He employed it againſt collections of water in the abdomen, againſt retentions of urine or difficulty in the diſcharge, againſt ſpaſms of the bladder, and againſt convulſive coughs, with the greateſt ſucceſs. It proves, he tells us, a very powerful diuretic; and the urine diſcharged after this plant is exhibited even in ſmall doſes, depoſites a conſiderable ſediment. When given in larger doſes, he affirms, that it acts more powerfully in augmenting the diſcharge of urine than ſquills, or any other of the diuretics hitherto eſteemed the moſt active. But he conſiders it as chiefly uſeful againſt bilious affections occurring in the ſummer; particularly thoſe which depend on thick, viſcid, black, inert bile, wandering in the body, or tranſlated to different parts, and not duly ſecreted. The form under which he recommends it, is that of the expreſſed juice of the plant.

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V.

Differtatio inauguralis Medica fiftens Obfervationes Practicas circa ufum Belladonnæ in Melancholia, Mania, et Epilepfia, quam pro gradu Doctoris, publice defendit Joannes Henricus Munch, *Cellenfis.* 4to, Gottingæ.

THE deadly night fhade, or *atropa belladonna* of Linnæus, though long confidered as one of the moft deliterious of the vegetable poifons, has alfo been not unfrequently employed for medical ufe. But moft of the obfervations which have hitherto been publifhed refpecting it, give little certainty with regard to its effects. In this differtation, however, of which we here extract an account from the Leipfic Commentaries, the author has collected a confiderable number of cafes treated by himfelf and his father, in which it has been employed with fingular fuccefs, and that

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that too in diseases of the most obstinate kind. Dr Munch, however, does not presume to recommend it as an infallible specific in those complaints. He recommends it only from facts, as a medicine in which there resides very active powers, in combating some affections, with regard to the causes of which we are still totally in the dark. And that this work might not exceed the usual bounds of inaugural dissertations, he confines himself to the detail of those cases in which it was employed with success.

He affirms, that the belladonna possess very remarkable powers as a discutient and resolvent. And he bears testimony to several cases of very large scirrhosities, which his father had successfully removed by its use. Dr Munch himself, by the employment of this medicine, was freed from a submaxillary tumour, which had succeeded the measles, and which had obstinately resisted the use of cicuta and other active medicines. It has also, he tells us, a wonderful effect in removing obstructions in the internal viscera; and he adds, that the celebrated Professor Murray of Gottingen had in a short time removed by its

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ufe feveral inftances of very obftinate jaundice.

Befides a narcotic power, this vegetable, he tells us, poffefs remarkable influence in promoting all the excretions, particularly thofe by fweat, urine, ftool, and faliva. It has alfo, he obferves, fuch influence on the menftrual difcharge, that fome are difpofed to think it exerts a peculiar effect on the uterus. He reprefents it alfo as given with fingular fuccefs in thofe difeafes arifing from the morbid matter of retrocedent exanthemata. It is, he thinks, from its refolvent power that it is ufeful in thofe inftances of melancholia, mania, and epilepfy, which arife from obftructions of the internal vifcera, efpecially if thefe obftructions have derived their origin from fpafms. And it is again, he thinks, from its narcotic power quieting the nervous fyftem, that it is ufeful in thofe difeafes, when arifing from what may be called immaterial caufes fuddenly difturbing the fenforium. In thefe cafes, he confiders it as reftoring tranquillity of mind in the fame manner as opium does. In confequence of that power which it poffeffes of mitigating pain, he confiders it

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as uſeful in every epilepſy ariſing from exceſſive pain, and in all thoſe alienations of mind where the patient's delirium is entirely reſpecting one ſubject. In all thoſe caſes where theſe affections ariſe from retrograde morbid matter, or from any intercepted excretion, he conſiders it as uſeful from its expellent power. And finally, he conſiders it as a medicine which ought always to be given in deſperate diſeaſes, after theſe have been found to reſiſt other modes of cure, and when the morbid cauſe cannot be detected.

With reſpect to the form in which this medicine ought to be given, he conſiders the powder of the plant, or of the root, to be preferable to the extract; becauſe, by the action of fire in forming the latter, a large portion of the volatile and more active parts is carried away. With reſpect to its exhibition, he recommends its being employed at once in a ſufficiently large doſe; for if it be exhibited in very ſmall doſes, the body, he tells us, ſoon becomes habituated to it, and its effects are loſt. And it was, he thinks, from this reaſon, that it failed ſo often with Dr

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Greding; who gave it not only in very ſmall doſes, but under the form of extract.

A conſiderable part of this eſſay is occupied in relating thoſe caſes communicated to our author by his father, in which the belladonna was employed with ſucceſs. Among others, it alleviated and removed one caſe of melancholly ariſing from an exceſſive menſtrual diſcharge; a ſecond proceeding from hereditary diſpoſition; and a third in a woman in her forty-eight year, probably ariſing from the ceſſation of the menſtrual diſcharge. It removed ſeveral alſo ariſing from interrupted evacuations, or from cauſes that were not obvious. It removed a caſe of mania, following exceſſive grief from diſappointed love; and likewiſe ſeveral other inſtances of that affection, in which the cauſe was latent.

It removed epilepſy in a girl, with whom that diſeaſe had been induced by ſevere laſhing in ſchool, and after it had continued for ſix years. Another epilepſy ariſing from obſtructed menſtruation was cured by it, upon the diſcharge being reſtored. The ſame medicine was alſo found effectual in removing caſes of epilepſy ariſing from anger, from fear, and

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and in combating ſome taking place as a conſequence of meaſles, of ſmall pox, of repulſion of tinea capitis, and of worms. And in conjunction with evacuant medicines, it happily reſtored to health a boy who had been epileptic for many years, in conſequence of obſtructions of the internal viſcera.

Theſe facts may be conſidered as ſtrong inducements to a trial of this remedy in the diſeaſes which have been mentioned, eſpecially when theſe have obſtinately reſiſted other modes of cure, and the diſeaſe has the appearance of being deſperate. It is, however, but proper to mention, that in ſome caſes in which the belladonna has been employed at this place, even in ſmall doſes, it has given riſe to a temporary mania with thoſe who were not before in any degree ſubjected to that affection. A circumſtance which we need hardly add ſhould lead every practitioner to adminiſter it with due caution, and to employ it only where the urgency and obſtinacy of the caſe render it neceſſary.

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VI.

An Account of the Effects of Swinging employed as a Remedy in the Pulmonary Consumption and Hectic Fever, with an introductory Letter to Sir Joseph Banks, Bart. President of the Royal Society. By James Carmichael Smyth, *M. D. F. R. S. Physician Extraordinary to his Majesty.* 8vo, London.

DR SMYTH had long entertained an opinion, that persons afflicted with pulmonary complaints would derive considerable advantage from the motion of swinging. He was therefore desirous of bringing it to the test of experiment. With that intention, he made application to the governors of the Middlesex hospital, who ordered a swing to be put up in the garden belonging to that charity. The success which attended the trials he made with a considerable number of patients, not only justified the idea he had formed,

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formed, but even exceeded his expectations. With the laudable purpose, therefore, of extending the benefit of this practice, he has here communicated to the public the result of his observations.

The advantage of sailing in the cure of consumptions has now been known for many centuries. It is recommended by the physicians both of ancient Greece and Rome. But although the benefit of sailing in this disease is now generally admitted, physicians still entertain very different sentiments respecting the particular circumstance or combination of circumstances from which this benefit is derived. The salubrity of the sea-air, the change of air, the vapour of the rosin and tar of the ship, the peculiarity of the exercise, the sickness and vomiting induced, have each been supposed the sole origin of the advantage derived from sailing. As these opinions have had considerable influence on the practice of medicine, Dr Smyth thinks it may not be improper to examine them.

Dr Gilchrist, who has written professedly on the subject of sea-voyages, adopts the first of these opinions, and recommends it to those

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who, from weakneſs or timidity, dare not undertake a ſea-voyage, to repair to the ſea-ſhore, and by riding or walking on the beach, to inhale as much as poſſible of the ſaline effluvia. Dr Ruſſel, believing every phthiſis to be ſcrophulous, is equally warm in his praiſes of ſea-water and ſea-air for the cure of it. But notwithſtanding theſe authorities, Dr Smyth's obſervations from actual practice led him to adopt a very contrary opinion. After reſiding for nine ſummers on the ſea-coaſt, with many opportunities of judging of this ſubject, he has no heſitation in aſſerting, that the ſea-air is conſtantly prejudicial to hectic and conſumptive patients, and even to thoſe who have a tendency to ſuch complaints.

His opinion in this reſpect is not, he obſerves, ſingular. And he mentions the names of Dr Knox, who practiſed for many years at Scarborough, and of Sir Lucas Pepys, who practiſed at Brighthelmſtone, as having alſo obſerved the air on the ſea-coaſt to be hurtful to the conſumptive. As a farther proof of the juſtice of theſe obſervations, he adds, on the teſtimony of Dr Ciciri, a phyſician of Milan, that the opinion is ſo general among

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the Italian phyſicians, that they conſtantly remove conſumptive patients from the ſea-coaſt to the interior parts of the country. The ſame opinion, he tells us, alſo prevails among the phyſicians in the ſouthern parts of France. And from the teſtimony of others, as well as from his own obſervation, he aſſerts, that Montpellier, formerly reſorted to from all parts of Europe, is one of the moſt improper places for the conſumptive that can poſſibly be choſen. The iſland of Madeira, notwithſtanding its temperate latitude, and very great equality of climate, he alſo conſiders as very unfavourable to thoſe whoſe lungs are materially injured. He concludes, therefore, that the recommendations of ſea-air have rather been the offspring of theory and faſhion than of any accurate reaſoning, and have chiefly ariſen from confounding the effect of ſailing with that of ſea-air; two things in their nature almoſt totally diſtinct, and even to a certain degree oppoſite.

In proof of this aſſertion, he relates the caſe of a young lady who was ſent to Margate with ſymptoms of a pulmonary phthiſis. She was directed when the weather was fa-

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vourable to ſail for ſome hours every morning. The immediate benefit ſhe received from it was truly ſurpriſing: for frequently after ſhe had paſſed a very reſtleſs night, and when weak and low from the colliquative morning ſweating, the boat had ſcarcely got out of the harbour before her ſtrength and ſpirits revived. Her cough, at other times conſtant and troubleſome, entirely left her, and ſhe remained free from it while ſhe continued on board: But no ſooner was ſhe on ſhore, than this, as well as all the other ſymptoms, again returned; although ſhe might be conſidered as equally breathing the ſea-air at all times, and although the ſailing never occaſioned ſickneſs or vomiting.

With reſpect to change of air, Dr Smyth contends that this may be obtained with much greater certainty on ſhore than at ſea; and that therefore the benefit of ſea-voyages cannot reſult from it. On ſhore, he obſerves, the air admits of great variety, according to height, expoſition, ſoil, &c. while he contends, that the only difference which can poſſibly take place at ſea is a difference in temperature. But it ought, we think, to be re-

membered, that moſt, if not all the circumſtances mentioned as varying the air on ſhore, are cauſes contaminating it. And it is very much to be doubted, whether there be any ſituation on ſhore where a patient can breathe as pure dephlogiſticated air as at ſea, eſpecially when at a diſtance from any land.

With reſpect to the effluvia from the vapour of tar and roſin, experience, he obſerves, has now taught us, that theſe and all other fumigations are but of trifling benefit, and frequently do more harm by exciting cough than they can do good by relieving the breathing. And he conſiders the idea that this complaint is to be cured by the healing of ulcerations in the lungs, as founded on falſe pathology and ignorance of the true nature of the diſeaſe.

Some have referred the benefit of ſea-voyages to exerciſe; but they have not attended to the diſtinction between motion and exerciſe. For if by exerciſe we mean that agitation of the body produced chiefly, if not entirely, by its own powers, thoſe ſubjected to pulmonary affections have much leſs opportunity for it at ſea than on ſhore.

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If the advantages derived from failing were owing, as has been the opinion of many, to the ficknefs and vomiting which it occafions, the benefit obtained from it ought always to be in proportion to its effects in producing thefe. This, however, Dr Smyth afferts, is by no means the cafe. In moft inftances, where he has feen any fingular advantage from failing, the fick were either not at all, or but flightly, affected by naufea and vomiting; while, on the other hand, he has known patients fuffer violently from both during the whole time of their being at fea, without the leaft abatement of the cough or hectic fymptoms.

Having thus endeavoured to fhow, that the true caufe from whence the advantage of failing in confumptive cafes is derived has hitherto efcaped the notice of phyficians and philofophers, Dr Smyth next proceeds to ftate his own fentiments. Here he reckons it firft neceffary to eftablifh the diftinction formerly alluded to between exercife and motion; a diftinction which he obferves has not hitherto been made by any perfon whatever. By exercife, he underftands mufcular action,

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or the exertion of the loco-motive powers of the body, either alone or combined. And he reprefents this as increafing the force and frequency of the heart's contraction, the velocity and momentum of the blood, the quicknefs of the breathing, the heat, the irritability, and the tranfpiration of the whole body. It gives alfo, he obferves, a temporary increafe of ftrength and vigour; and when continued beyond a certain time, induces laffitude, debility, and languor. But when regulated according to the ftrength, it promotes digeftion, gives tone and vigour not only to the ftomach but to the whole fyftem; and is therefore of fervice where the action of the ftomach is impaired, or in cafes of general weaknefs. To pulmonics, he adds, it occafions a fenfe of oppreffion at the cheft, with a fhortnefs of breathing, cough, and palpitation of the heart; and therefore proves hurtful, or is of doubtful efficacy, where the lungs are obftructed, inflamed, or irritable, and where the circulation is already too rapid.

Having given this account of the effects of exercife, he next proceeds to ftate thofe of motion; by which, in contradiftinction to exercife,

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ercife, he means that motion not neceffarily accompanied with any agitation or fuccuffion of the body, and which is totally independent of any mufcular exertion. The two moft obvious examples of this are failing and fwinging; to which he thinks that a third may poffibly be added, aëroftation. But as the laft has not hitherto, and probably never will be ufed for medical purpofes, he confines his obfervations to the two former. Moft of thofe unaccuftomed to failing are at firft affected with giddinefs, ficknefs, and vomiting, which in general are fevere in proportion to the delicacy and irritability of the individual; though infants are an exception to the rule. Motion, he obferves, affects the lungs, as appeared from its influence in the cafe already quoted, in immediately fufpending the action of coughing. The heart alfo feels its influence, as is evident from the frequency of the pulfe being fometimes leffened by it. And as a ftrong evidence that thefe effects are merely the confequence of the motion, he obferves, that they are produced not only by failing, but alfo by fwinging; the motion of which is ex-

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tremely ſimilar to that of ſailing, though reſembling it in no other particular.

Dr Smyth, in our opinion, has here pointed out with no leſs judgment than accuracy, the difference in the effects reſulting from motion and exerciſe; and there cannot, we think, remain a doubt, that the diſtinction between theſe two, as applied to the purpoſes of medicine, has a foundation in nature. But this diſtinction is not, perhaps, ſo new as Dr Smyth ſeems to imagine. For though different terms have been employed, yet nearly the ſame idea has been conveyed by thoſe who have divided exerciſe into the active and paſſive kind; and it is, we think, not without ſome advantage that they have pointed out an intermediate kind, which, as in ſome degree combining the effects of both, has been ſtyled the activo-paſſive.

After thus ſtating the effects of motion, and the grounds on which benefit may be expected from it in conſumptive caſes, he next proceeds to relate facts and obſervations from actual practice, by which this benefit is confirmed. And he here preſents us with the detail of fourteen caſes in which he employed

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it with patients admitted into the Middlefex hofpital. The firft cafe is that of a man in his 45th year, affected with frequent cough, copious purulent expectoration, and acute hectic fever. He began to ufe the fwing on the 16th of June; and after fwinging for ten minutes his pulfe was obferved to fall from 124 ftrokes in the minute to 119. Its continuance on fucceeding days had a fimilar effect, while his feverifh exacerbations became lefs violent, and his other fymptoms diminifhed. By the 26th of July he was fo free from complaints that he was difmiffed from the hofpital; and he continued at the end of a confiderable time afterwards in perfect health.

The fecond cafe was that of a man who had for fome years been fubject to a cough, at times fpitting up blood in confiderable quantity. When he applied for affiftance at the Middlefex hofpital, he was affected with regular evening exacerbations of fever, and colliquative fweats during the night, and his pulfe was 130 in the minute. From the ufe of the fwing, the frequency of his pulfe was gradually diminifhed, and he recovered his ufual health in the courfe of fome weeks. In the

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the third case it was equally ſucceſsful ; and the apothecary, who paid particular attention to this patient, remarked that he never coughed while in the ſwing ; and the man himſelf declared that he conſtantly felt cooler, breathed eaſier, and expectorated more freely, immediately afterwards.

In ten other caſes here related, all of which were attended with ſymptoms giving at leaſt ſtrong preſumption of phthiſis, under the uſe of the ſwing, continued from ten minutes to half an hour at a time, the ſymptoms of the patients gradually left them, and they were diſmiſſed from the hoſpital in good health. But in the laſt caſe, that of a lad about fifteen years of age, who applied at the hoſpital with ſymptoms of confirmed and rapid phthiſis, it was not attended with the ſame ſucceſs. Neither the daily uſe of the ſwing, nor various other medicines which were preſcribed, had any influence in checking the progreſs of his diſorder, which ſoon terminated fatally. But even in this caſe, Dr Smyth tells us, that though the ſwinging did not leſſen the frequency of his pulſe, it relieved his breathing, and

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and he was free from the cough during the time of it.

After having given a detail of theſe caſes, Dr Smyth concludes this treatiſe by drawing from them a few concluſions reſpecting the power of motion on the body. He concludes, that the motion of ſwinging has often a very ſenſible and immediate operation on the heart and lungs, as it reduces the frequency of the pulſe, leſſens febrile heat, ſuſpends or prevents coughing, and promotes expectoration. He concludes, that ſailing, an analogous motion, will have the ſame operation on the heart and organs of reſpiration, and that this affords a complete explanation of the advantage ariſing from ſea-voyages in the cure of pulmonary complaints and hectic fever. He concludes, that the effects of motion are not only different, but in many reſpects oppoſite, to thoſe of exerciſe. While exerciſe increaſes the heat of the body and frequency of the pulſe, excites cough, and occaſions ſweating, languor, and fatigue, motion leſſens the heat and the frequency of the pulſe, prevents and removes coughing, and invigorates even the moſt weakly. In ſhort, while exerciſe acts

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as a ftimulus, motion operates as a fedative on the fyftem. And this fedative power of motion, Dr Smyth is convinced will be found not only ufeful in the cure of pulmonary complaints, but may be employed with advantage in a variety of other cafes.

While motion for its employment in the practice of medicine may be obtained either from failing or fwinging, which produce in many refpects fimilar effects, yet there are, he obferves, fome circumftances in which they differ. Sailing he confiders as having the fuperiority over fwinging, in the motion being continued both night and day, and as being frequently united with a change of climate, often in other refpects falutary. On the other hand, fwinging is a remedy within the reach of every one; it is neither attended with the rifk nor inconvenience of fea-voyages; it may be employed at any period of the difeafe, or in any degree of weaknefs; and although the open air is to be preferred, yet it may even be ufed in a bed-chamber.

We cannot conclude our account of this treatife without expreffing an earneft wifh, that the fuccefs which has attended the trials made

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made by Dr Smyth may be confirmed by the experience of others. If that experience ſhall eſtabliſh its efficacy in the cure of phthiſis, there is perhaps no medical diſcovery of the preſent age which can be compared with it in point of importance. We are, however, ſorry to add, that, from our own experience, we cannot ſay much in favour of it. Since the publication of Dr Smyth's treatiſe, we have had recourſe to it in a conſiderable number of caſes. In ſome few, where there were ſymptoms giving a preſumption of phthiſis, benefit ſeemed to ariſe from it; in others, though employed at a period when the ſymptoms were very ſlight, yet it had no influence either in checking the progreſs of this inſidious diſeaſe, or in preventing its fatal concluſion. And indeed we have not met with any one caſe where phthiſis had decidedly taken place, in which any material benefit aroſe from its employment. With ſome patients, the ſickneſs it occaſioned was ſo diſtreſſing that they could not be prevailed upon to give it a proper trial; while with others it produced no obvious effect whatever, and particularly no change on the ſtate of the

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pulſe. We are, however, far from conſidering the trials we have made as any argument to deter others from directing its employment. And whatever the ultimate deciſion of experience may be with reſpect to this practice, we muſt ſtill think the author of this treatiſe juſtly intitled to that praiſe which the public ought ever to beſtow on induſtry and ingenuity.

VII.

Josephi Quarin *Sacræ Cæs. Reg. Apost. Maj. Concil Aulic et Archiat in Nosocom. General. Vindobon. Directoris Supremi, Animadversiones Practicæ in diversos Morbos.* 8vo, Vinnæ.

THE author of this treatise, who has arrived at the head of his profession in a large city, here presents us with the fruits of his observations during a practice of thirty years, and after having had the opportunity of having under his immediate direction one of the most extensive and best regulated hospitals in the world. Without aiming at any general arrangement, he here treats of sixteen different diseases, bestowing a particular chapter upon each. It is not our intention to give a full analysis of all he has said, particularly with regard to the history and theory of particular diseases. We shall chiefly aim at point-

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pointing out the practices he advifes which differ from thofe commonly employed in this country.

The firft difeafe of which he treats is apoplexy. After mentioning the common divifion of this difeafe into the fanguine and ferous, which laft, however, he reprefents as a very rare affection, he recommends, as a firft remedy in the former fpecies, blood-letting in the different ways in which it has ufually been advifed. He advifes finapifms to the feet; but diffuades from the ufe of blifters, unlefs after copious bleeding. Although an enemy to draftic purgatives, yet he advifes a gentle one; and for this purpofe he recommends a mixture containing a drachm of nitre and two ounces of the rob of elder diffufed in ten ounces of water. After feveral loofe ftools have been obtained by means of it, he recommends that eight or ten grains of the extract of arnica fhould be added to it.

He points out the danger of emetics even in thofe cafes where repletion of the ftomach has preceded the attack; and obferves, that thofe fall into an egregious error who prefcribe emetics on account of bilious vomiting,

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as this frequently arises from plethora giving oppression to the brain. To those of a cold and languid temperament he recommends the following powder: ℞ Colocynth. gr. i. sach. unc. sem. divid. in dos. viii. sumat æger tertia aut quarta quavis hora ejusmodi pulverem. To patients of this constitution he observes that issues and setons are also of use.

In the second chapter he treats of epilepsy. As the fit seldom proves fatal, he thinks it sufficient during its course to attend to the position of the body and the prevention of injuries. He condemns the application of acrid substances to the nose, lest sneezing should be induced, which may endanger a rupture of the vessels within the brain. And he affirms, that he has seen opium, during a fit, not only be productive of no relief, but give rise to apoplexy. Among other remedies to be used during intervals between fits, he recommends phosphorus, in doses from one to three grains, taken three or four times a-day in any liquid, or in a little conserve, in those cases where the impetus of circulation is to be increased. With some epileptic patients of a pale and swoln appearance, he

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tells us that he has obtained a complete cure by the uſe of inſpiſſated ox-bile continued for ſeveral weeks. But of all the remedies that have been employed againſt epilepſy, he looks upon the root of the wild valerian as upon the whole the beſt. He directs it to be given from two to five drachms in the courſe of the day under the form of powder; and he adviſes that the root ſhould be gathered before the leaves come out: And when the recurrence of paroxyſms happens at certain periods, he adviſes that it ſhould be conjoined with the Peruvian bark.

The next ſubject of which he treats is cough; a diſeaſe proceeding from ſo many different cauſes as to require a great variety in the cure. In the convulſive cough, he recommends the following powder as having often proved highly ſerviceable:

℞ Flor. ſulph. drachmam unam.
Gum. Arab.
—— Tragacanth. utriuſque ſeſquidrachmam.
Extract. Glycyr.
Sachar. utriuſque drach. duas.
Kermes min. gr. ii.—iv. f. pulv.

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He advises half a drachm or a scruple of this powder to be taken every third or fourth hour, a draught of the infusion of fennel-root and the flowers of the verbascum being taken after it. He recommends also nearly a similar powder of kermes mineral with the addition of squills, in the coughs of old people attended with copious expectoration, where the difficulty of breathing has become so excessive that there is danger of suffocation.

In the fourth chapter, Dr Quarin treats of hemoptysis. He observes, that this is a very frequent disease at Vienna, which he thinks may be owing to the height of their houses and stairs; and he points out the abuse of mercury as another common cause of this disease. In the treatment of this affection, he trusts chiefly to venesection. When astringents are indicated, he gives the preference to alum; and where a stronger astringent is required, he advises that a grain, or half a grain, of the vitriol of iron should be added to each dose of the alum. With regard to the use of cold drink, particularly ice-water, he observes, that almost all those to whom he has seen it exhibited have died of phthisis.

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Where the difeafe is liable to frequent returns, he recommends a change of climate and of fituation.

In the cure of phthifis, which is the fubject of the fifth chapter, though he recommends blood-letting, yet he cautions practitioners againft repeating it till the inflammatory cruft difappears. And he affirms, that from experience he has found the infpiration of fixed air more pernicious than advantageous. He entertains a good opinion of the lichen iflandicus; and although he admits that he has often employed it without advantage, yet he afferts that he never faw it productive of any bad effect, as has been alleged by fome. It at leaft affords, he alleges, excellent nourifhment, and has the effect of rendering milk of readier digeftion, and making it fit more eafily on the ftomach.

Although the Peruvian bark has been condemned by many in cafes of phthifis, yet Dr Quarin looks upon it as one of the beft remedies, particularly where the difeafe follows an open vomica; and indeed he confiders it as the only thing which gives any chance of fuccefs, where phthifis arifes from an intermittent

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mittent or remittent fever. He prefers, however, the bark in decoction to its uſe in ſubſtance; for the latter, he allows, has ſometimes the effect of checking expectoration. When the patient is very pale, and without any acute hectic fever, he adviſes, in conjunction with the bark, the watery extract of myrrh conjoined to the ſugar of milk; but he thinks that the myrrh ſhould always be uſed with great caution where the patients have before laboured under hemoptyſis. He condemns the uſe of all the balſams, even of the genuine balſam de mecca, which ſome have highly extolled on account of its peculiar flavour.

In treating of the means of obviating particular ſymptoms in phthiſis, he obſerves, that ſome have propoſed as a remedy for the colliquative ſweats the uſe of agaric, taken to the quantity of two grains. But he never found it of any benefit to the patient; on the contrary, he tells us that it often produced great oppreſſion at the breaſt. He conſiders a decoction of the bark with a ſmall quantity of vitriolic elixir as the beſt remedy in thoſe caſes. For reſtraining a colliquative diar-

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rhœa, he recommends a decoction of ſalep, the powder of the ſalicaria and paregorics.

As a means of furniſhing good chyle to phthiſical patients, he adviſes milk diet, and gives the preference to human milk over every other. He thinks that advantage may ſometimes be derived from conjoining Seltzer or Spaw water with the milk; but he is a violent opponent to the uſe of large quantities of any water. As articles of diet, he is for allowing patients the uſe of broth of ſnails and frogs, or of raw oyſters, as mild and nutritive articles; but he cautions againſt their being employed in ſuch quantities as to load the ſtomach. He recommends that food ſhould be often given to phthiſical patients, but always with a ſparing hand; and he adviſes pure country air in preference to that of large cities. But he thinks thoſe ſituations are exceptionable which are near mountains, becauſe there very ſudden changes of weather are apt to take place.

He repreſents aſthma, the ſubject of which he next treats, as being frequently an incurable diſeaſe, young people ſeldom recovering from it, and old people never. In the humid

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mid afthma, he recommends, with the interpofition of purgatives and acrid glyfters, kermes mineral, gum ammoniac, and an infufion of the tops of the dulcamara. He never, he tells us, faw any benefit from the extract of tobacco, which by fome has been highly recommended in this affection.

In the convulfive afthma, he advifes, during the paroxyfm, faffron, the fpirit of fal ammoniac, and opiates; and in the intervals between paroxyfms, friction of the fpine, riding, and pills confifting of valerian, galbanum, and affafœtida. When afthma arifes from a large quantity of fat about the heart, it is, he tells us, to be removed by low diet, confifting chiefly of garden ftuffs, by hard exercife, by care, and by watching.

He next treats of the hydrops pectoris, which he reprefents as a difeafe occurring more frequently than is commonly imagined. In the beginning, he obferves, it is often very difficult to diftinguifh it, and in its progrefs it is often incurable. In the treatment, he tells us, that he has in general found both the extract of tobacco, and the arnica, which has been very much employed at Berlin, to

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be inefficacious. He condemns the ufe of purgatives and of fudorifics in this difeafe, and thinks that the only mode of combating it is by an increafe of the urinary difcharge; for this purpofe he confiders fquills as preferable to every other medicine: and he obferves, that befides operating as a diuretic, he has in fome inftances feen falivation excited by means of this article, but without that uneafinefs of the gums which attends mercurial ptyalifm. He condemns the paracenthefis of the thorax in this difeafe; but thinks that benefit may fometimes be derived from fcarification of the legs.

The fubject of the eighth chapter is afcites. After fome obfervations on emetics, cathartics, and fudorifics, as employed in the cure of this difeafe, he next makes fome remarks on diuretics; and of all thefe, he confiders fquills as the beft, particularly when given under the form of the powder of the dried root, or of the watery extract. He never faw any benefit from the colchicum, although confidered by fome as nearly approaching to fquills; nor did he obtain better effects either from the extract of the lactuca virofa or from the

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the gratiola. In certain cafes, he has feen good effects from the tonic pills of Bacher; the formula for preparing which has been fome years ago publifhed by Mr Ricard. The bafis of thefe pills, of which we gave an account in the fecond volume of thefe Commentaries, is an extract formed from the root of the black hellebore. But Dr Quarin is of opinion, that he has feen more benefit from employing the hellebore under the form of infufion, combined with vegetable bitters, particularly when the afcites is attended with obftructions of the vifcera, or with a glutinous ftate of the fluids. He recommends the following formula:

℞ Abfinth. Pont.
Saponar. utriufque unc. unam.
Rad helleb. nigr. drachmam unam.
Coque per quartam horæ partem in aquæ fontis, q. f. colaturæ, lb. i. adde,
Oxymel. fcillit.
Syr. de duabus utriufque unc. unam. M.

Of this mixture he advifes an ounce to be taken every fecond or third hour. Care, he obferves, muft be taken that the helleborus viridis of Linnæus be not ufed in place of the helle-

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helleborus niger. But if this does not produce a copious difcharge of urine, he advifes that fquills fhould be conjoined with it. In very lax habits, after the water is evacuated, he recommends the tinctura martis conjoined with a proportion of the extract of hellebore.

Vomiting of blood, although an alarming difeafe, he reprefents as being in general free from danger, particularly when it arifes from obftructed menftruation. Scorbutic patients, he obferves, fometimes vomit blood; but in that cafe it is rarely grumous, and in general refembles the wafhings of flefh. This affection fcarcely, he tells us, admits of a recovery.

Though he allows that cholera is more frequent in Auguft than in other months, yet he confiders this as being chiefly the confequence of warm days fucceeded by cold nights; and he thinks the difeafe is more owing to acrid bile than to the abufe of acid or refrigerant fruits. He thinks that the cure is to be entirely trufted to opium; to which he advifes that recourfe fhould immediately be had, a few drops of liquid laudanum being exhibited every four or five minutes.

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In dyſentery, which is the ſubject of the eleventh chapter, Dr Quarin obſerves that the cure is very much varied according to the variety in the nature of the diſeaſe. After ſome obſervations on blood-letting, emetics, and cathartics he obſerves that the ſalicaria is here preferable to other demulcents; and he adviſes it to be given either under the form of powder, or in a mixture, to the extent of a ſcruple every ſecond or third hour. In the putrid dyſentery, after the body has been ſufficiently purged, and after there is no longer any fear of inflammation, if diluents and demulcents be not productive of the deſired effect, he adviſes the cortex ſimarouba, and the ſuccus catechu; but he condemns the uſe of alum. In certain caſes of this diſeaſe, he recommends that a decoction of the root of tormentil, with a proportion of gum Arabic and camphor, ſhould be uſed by way of injection.

Jaundice is, he obſerves, a diſeaſe ſometimes eaſily cured, ſometimes proving fatal in a very ſhort time. While the cure is much varied, according to diverſity in the cauſe of the affection, he obſerves, that in ſome inſtances

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ſtances he has overcome obſtinate dyſentery, reſiſting every other mode of cure, by the long continued uſe of ripe ſummer-fruits. In caſes where the diſeaſe aroſe from ſchirroſity, he has often given the belladonna. To a few it was of advantage; but to the greateſt number it afforded no relief.

In treating of hæmorrhoides, he obſerves, that the diſeaſe is now more frequent at Vienna than formerly, although wine be uſed more ſparingly. This, he thinks, may perhaps be owing to the abuſe of aromatics, or to the want of exerciſe, and to the practice of riding more frequently in carriages. Againſt the hemorrhoides cecæ, among other remedies he mentions the juice of the root of the tarraxacum as being ſometimes of ſervice. Where an exceſſive diſcharge takes place from veſſels ſeated ſo high in the inteſtines as not to admit of the immediate application of aſtringents, Dr Quarin conſiders the internal uſe of the vitriol of iron as very advantageous. Opium, he obſerves, does not agree with theſe caſes, and is only admiſſible when the diſcharge is ſupported by ſevere teneſmus. For the prevention of hæmorrhois, it is neceſſary

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ceſſary to obviate conſtipation; and for this purpoſe he recommends the uſe of mineral waters gently purgative.

In the two ſucceeding chapters, Dr Quarin treats of arthritis and podagra; which, following Van Swieten, he conſiders as different diſeaſes. Where arthritis has been the conſequence of acid, he ſtrongly recommends the uſe of ſoap. And he mentions the caſe of a man who had been affected for a long time with ſevere arthritic pains in different parts of his body, notwithſtanding the uſe of various remedies. Recollecting that this man had been long accuſtomed to the uſe of diluted vitriolic acid, he preſcribed for him the following mixture:

℞ Ol. amygd. unc. unam.
Syr. alth. unc. duas,
Vitel. ovor. q. ſ.
Diu ſimul tritis et ſubactis, adde
Aq. commun. unc. decem.
Sal. tart. ſemidrachmam. M.

By this medicine, taken twice, his ſevere pains were removed. Narcotics, he alleges, although giving immediate eaſe, yet render arthritis more obſtinate; and he conſiders opiates

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opiates as prejudicial in the febrile arthritis, even although blood-letting be premifed. He mentions the oleum terebinthinæ conjoined with honey, as having in fome cafes been productive of advantage where there was no fever; but he could never obferve its diaphoretic power. With regard to cold bathing, he affirms, that although it has been ufeful to fome, it has been prejudicial to others; and he obferves, that though the American Indians are in the frequent habit of ufing it, even from earlieft infancy, yet that many of them fall victims to inflammatory difeafes occafioned by the viciffitudes of the weather.

With regard to podagra or proper gout, he condemns the opinion of thofe who afcribe it to the acid of wine. He thinks it chiefly arifes from very full diet, neglect of exercife, exceffive venery, and intenfe ftudy. He obferves, however, that he knew an inftance of two brothers, defcended from a gouty father; the one of whom was feverely diftreffed with the difeafe, although he lived in the moft fober and regular manner; while the other was entirely free from it, although indulging in every excefs that could be fuppofed to induce

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duce it. As no proper cure for this diſeaſe is yet known, he contents himſelf with delivering a few precepts reſpecting the treatment of it, moſt of which are very generally received; particularly thoſe which reſpect blood-letting, purgatives, ſudorifics, opiates, and topical applications. He obſerves, that quaſſia has been recommended by ſome; but alleges that every benefit to be obtained from it may be had from gentian.

In the laſt chapter of this work the author treats of venereal affections. In the treatment of gonorrhœa, he recommends ſtrongly diluents and demulcents. He condemns entirely the uſe of ſaturnine injections, as inducing ſevere pains both in the belly and limbs; but when the running is of long continuance, he adviſes aſtringent injections, as decoctions of tormentil and Peruvian bark. For the removal of warts and condylomata, he recommends lime-water, a ſolution of alum, or corroſive ſublimate. He conſiders the pulv. Sabinæ as ſcarcely deſerving mention.

Againſt venereal ulcers, eſpecially when occurring in the fauces, with a hectic ſtate of the body, and yielding a thin acrid ichor, he

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has found great benefit from the following powder, taken three or four times every day:

℞ Extract. gratiol.

Pulv. Foenic.

—— Lap. cancror. *aa.* gr. quinque. M.

This medicine, he tells us, acts chiefly by increasing the discharge of saliva and of urine; it seldom purges, and almost never excites sweating. After several observations on the use of sarsaparilla, guaiac, lobelia, antimony, and mercury, in different forms, as employed in cases of lues venerea, he takes notice of a remedy which he tried on the recommendation of Baron de Stork. This remedy is the root of a species of the astragulus; by which, it would seem, that the venereal disease has long been cured by some old women in Hungary. Dr Quarin employed it under the following formula:

℞ Astragali exscapi, unc. sem.

Coque in quindecem uncias aquæ donec superfit. lb. i. sumat æger tepide mane et vesp.

This decoction, he tells us, has a very agreeable taste, approaching nearly to that of

 liquorice.

liquorice. He gives here a particular relation of four cafes in which it was employed with fuccefs. In thefe it operated by ftool, by urine, and by fweat; but without occafioning any great inconvenience to the patient. A favourable change was foon induced in the fymptoms, and in no long time a complete recovery. Although there can be no doubt that the prudent ufe of mercury affords, in moft inftances, both an effectual and a fafe cure of lues venerea; yet as there are conftitutions to whom it cannot be given without great hazard, and as there are cafes which, from particular circumftances, feem to refift its power, the difcovery of another remedy, by which the difeafe may with certainty and eafe be combated, is of no fmall importance in practice. And if future experience fhall afford confirmation that the aftragalus exfcapus is productive of this effect, it may be confidered as a very ufeful addition to the materia medica.

VIII.

An Account of a ſingular Diſeaſe which prevailed among ſome poor Children maintained by the Pariſh of St James's in Weſtminſter. By Sir George Baker, *Bart. Phyſician in Ordinary to the Queen, Fellow of the College of Phyſicians, of the Royal Society, and the Society of Antiquaries in London, and of the Royal Society of Medicine in Paris.* Vide *Medical Tranſactions, Vol. III.* 8vo, London.

ALTHOUGH, from the ſingularity of the diſeaſe here treated of, there is reaſon to preſume that it will not be frequently the ſubject of practice, yet the attention which the learned and judicious author has employed in endeavouring to inveſtigate its cauſes, may, we apprehend, be of no inconſiderable uſe in the prevention of different affections.

In the end of September 1783, ſeventy-three

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three children, from ſeven to fourteen years of age, were removed from Wimbledon to a large houſe in King's Street near Golden Square, purchaſed by the pariſh-officers for their reception. They all continued in good health for about twelve days; but on the 8th of October, a girl of the age of thirteen was ſuddenly ſeized with an excruciating pain in the region of the ſtomach and in the back. This was ſoon followed by violent headach, delirium, and convulſions. From proper aſſiſtance ſhe received a temporary relief: But in a few days a ſecond and a third girl were attacked in the ſame manner. After which, it prevailed ſo much as to alarm all thoſe to whom the care of the children had been committed.

Upon this the pariſh-officers applied to Sir George Baker for advice. Upon viſiting the houſe, he found nine of the girls and a female ſervant in the ſame room ſuffering the various effects of a moſt dreadful malady. Five were in the agonies of extreme pain; three were ſeverely convulſed, and the other two were raving in a fit of delirium. Sir George was informed, that ſince the firſt appearance of

this diſorder, ſome of theſe patients had been ſubjected to ſeveral attacks, and had ſeveral times been relieved principally by the uſe of purgative medicines; but that within the two laſt days the attacks had been more violent, that the intervals of eaſe had been ſhorter, and that the delirium had ſcarcely ever ceaſed entirely. It had likewiſe been obſerved, that ſickneſs at ſtomach had uſually been the leading ſymptom; that the bowels in general had been in a coſtive ſtate; but that, in three inſtances, a ſpontaneous diſcharge by vomiting and looſeneſs had given immediate relief, and had ſtopped the farther progreſs of the diſeaſe. The coſtiveneſs which commonly occurred was occaſionally removed without much difficulty. During the remiſſions, the children lay quiet ſometimes for an hour or two; after which they ſuddenly ſtarted up, ſcreaming with afflictive torture. When they were able to give a conſiſtent account of their own ſufferings, they all agreed, that, upon the approach of the fit, their firſt ſenſation of pain was in the ſtomach. After this abated, which generally happened in a few minutes, the head, particularly the back

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back part of it, was attacked in a ſimilar manner; and to this a total perverſion of the underſtanding ſoon ſucceeded. None of them had any degree of fever; and during the moſt violent paroxyſms of pain, the ſtomach and bowels ſeemed to the touch ſoft and natural. It was alſo obſerved, that their paroxyſms were always moſt ſevere immediately after ſleep.

Upon diligent inquiry reſpecting the ſtate of health of the other inhabitants of the houſe, Sir George found, that in general they had been very healthy; and he could diſcover no cauſe of diſeaſe either in the food employed or in the veſſels in which it was dreſſed. He obſerved, that the diſeaſe affected females only, and that it was confined to thoſe who ſlept together in a certain room on the ſecond floor. It was natural, therefore, to inquire in what circumſtances this chamber differed from the other appartments. The height of it was little more than eight feet, the length twenty, and the breadth ſixteen. It contained ten beds, in which it was intended that eighteen girls and a female ſervant ſhould ſleep. But this being a favourite room, it

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was generally crowded at night by a much greater number than its juſt complement. That as much ſpace might be made for beds as poſſible, the chimney had been ſtopt up with brick; and it had been the conſtant cuſtom of the ſervant to keep the door ſhut, and to cloſe the window-ſhutters, at night. This chamber had been painted no long time before, as well as the reſt of the houſe; and Mr Rennel the apothecary obſerved, that when he was called to it in the middle of the night, he found the ſmell of paint very diſagreeable to him, although he had hardly perceived it during the day. From the time of the commencement of this illneſs, three candles and a lamp with oil had commonly been uſed during the night; and the attendants in general agreed that they were hardly of any ſervice, giving but a glimmering light, and frequently almoſt extinguiſhed.

It was remarkable, that in a chamber adjoining, of the ſame dimenſions, painted at the ſame time, and inhabited by as many girls, but differing from it in having the chimney open, and in not being kept ſo cloſe-ly ſhut up, no ſymptom of the diſeaſe had ap-

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appeared in any of the children. It was alſo another remarkable circumſtance, that a female ſervant who had paſſed one night only in the room where the ſickneſs prevailed, was on the following morning attacked by the ſame pain, delirium, and convulſions, under which ſhe ſuffered moſt ſeverely. It was farther remarkable, that the diſeaſe affected only the nine elder children, all of them above thirteen years of age.

Having given this account of the diſeaſe, and the principal facts reſpecting it, Sir George mentions ſeveral inſtances upon record, where the accidental ſight of a patient ſuffering an epileptic attack had immediately occaſioned a ſimilar attack in others, and where convulſive affections have been induced by imagination alone. But he remarks, that in the preſent caſe each paroxyſm was preceded by the moſt painful irritation, of which it was evidently the immediate effect. Hence he infers, that it was not here propagated from one perſon to another, but that ſome common external cauſe prevailed, by which the nerves of the ſtomach were affect-

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ed, and, in confequence of this, the nervous fyftem in general.

For combating this affection, the advice given by Sir George Baker was to evacuate the chamber of the fick without delay; to feparate the healthy from the difeafed; to open the chimney; and to remove whatever tended to exclude frefh air. Thefe directions were immediately put into execution, and the patients paffed a quiet night entirely free from every fymptom of difeafe. Upon awaking, however, next morning, they were all feized in the ufual manner; but the fits returned with lefs violence, fometimes without convulfions, and the delirium gradually abated. Thus, for fome days, there was every reafon to hope that the malady was about to ceafe entirely: But on the night of the 6th of November the affection returned with violence; and in the morning of the 7th, Sir George found them all, after having paffed many hours in pain and convulfions, in a moft outrageous ftate of infanity, which continued the whole day. After that the diforder made no general attack; and although they had feparately feveral returns of pain in the ftomach

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and bowels, yet theſe were leſs violent, and were ſeldom followed by convulſions. At length the lower bowels only were affected; and with moſt of them the ſtools were attended by a painful irritation at the rectum; and they had great difficulty in diſcharging urine.

In this manner the diſeaſe terminated, all the patients ſoon recovering their ſtrength and ſpirits, excepting the ſervant maid, who was afterwards ſubject to frequent attacks of ſevere headach and giddineſs; and after any extraordinary exertion of ſtrength, was obſerved to have a wildneſs in her countenance, which, however, was not followed by any degree of convulſion.

The author points it out as a circumſtance worthy of obſervation, that the diſeaſe made no farther progreſs from the time that the chamber of the ſick was evacuated, although during the preceding night no leſs than three perſons had their firſt ſeizure. With regard to the effects of different remedies occaſionally employed with theſe patients, he obſerves, that opium gave ſome relief to the pain of the ſtomach, but that it was ſuſpected to aggra-

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vate the headach, delirium, and convulſions. Some other antiſpaſmodics were found to be uſeleſs. Bliſters, particularly when applied to the region of the ſtomach, were certainly beneficial. Emetics had always a good effect; ſenna never failed to increaſe the tormina, and ſeemed to haſten on the convulſions. The oleum ricini ſeemed at firſt ſufficiently powerful; but afterwards purgatives of greater efficacy were neceſſary.

As a proof that this diſeaſe was the effect of impure air, Sir George Baker here relates a caſe communicated to him by that very reſpectable phyſician Dr Heberden, of a young man who had been for ſome time ſhut up in a room with burning charcoal. He continued in it till two ſmall birds fell down dead in their cages. He was then ſo ill as to be obliged to go into the air. He had no ſooner done ſo than he fell down ſenſeleſs. When he came to himſelf, he complained of giddineſs, ſickneſs, a pain of his ſtomach and loins, and of ſtupor. All theſe ſymptoms continued the whole day. Next day he thought himſelf better; but about ſeven in the evening, he

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he was ſeized with a very violent pain in his ſtomach and loins; he vomited, threw himſelf down upon the ground, fell into convulſions, and could hardly fetch his breath. After he had a little recovered himſelf a ſecond fit of the ſame ſort took place. This was ſucceeded by delirium; and it was with difficulty he could be kept in bed during the whole night. In the morning he had ſome quiet ſleep; after which he was free from the delirium: but the pain was not entirely gone; and he continued to complain of giddineſs, and of ſtrange ſights before his eyes, for ſome time longer. As facts ſomewhat analogous to this, he mentions, that Dr Garthſhore, an eminent practitioner in midwifery, and an accurate obſerver of thoſe diſeaſes which fall particularly under his notice, has often ſeen dangerous convulſions induced immediately after delivery, when a cloſe unventilated chamber has for a long time been crowded with the attendants and friends; and that, after the moſt exact attention and ſtricteſt inquiry, he has not been able to aſcribe theſe to any other cauſe than the long continued inſpiration of air, ſaturated

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turated with animal and other ſeptic exhalations.

In reaſoning upon this ſubject, he endeavours to ſhow, from the experiments of Dr Prieſtley upon reſpiration, and from the practice of the ancients in purchaſing ſlaves, as recorded by Apuleius, that the contaminated air acts by preventing the eſcape of phlogiſton from the blood, which always takes place when reſpiration is performed in pure air.

From theſe facts and obſervations, Sir George Baker thinks that a probable reaſon is afforded why thoſe who inhabit houſes where, for the ſake of warmth, every art has been employed to exclude the outward air, and who ſpend much of their time in air tainted by animals and burning candles, are ſubject to nervous diſorders; and why this habit of life is particularly hurtful to the tender and valetudinary. He even conjectures, that the numerous palſies of late ſo frequent in London may have originated from this ſource. Whether this conjecture be in any degree well founded or not, there cannot be a doubt, that

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that the cautions naturally ſuggeſted, with reſpect to the preſervation of pure air, from the facts related in the paper before us, well deſerve the ſerious attention of every medical practitioner anxious for the preſervation of health or the prevention of diſeaſe.

IX.

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IX.

A Letter to Sir George Baker, *Bart. on the succeſsful uſe of the Preparations of Lead in ſome Hæmorrhagies. By* Henry Revell Reynolds, *M. D. Fellow of the College of Phyſicians, and of the Royal Society, and of the Society of Antiquaries in London.* Vide *Medical Tranſactions, Vol. III.* 8vo, London.

SIR GEORGE BAKER, in his excellent eſſays on the properties of lead, had oftener than once expreſſed his regret that the preparations of that mineral, although poſſeſſed of ſingular powers in reſtraining hæmorrhagies, cannot be uſed internally with ſafety. Dr Reynolds, therefore, flatters himſelf that Sir George Baker, for whom he expreſſes the higheſt eſteem and friendſhip, will learn with ſatisfaction, that he has frequently employed both the tinctura ſaturnina and ſaccharum ſa-

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turni with ſucceſs and ſafety, and without the leaſt colic enſuing.

It would ſeem that he firſt began this practice about ten years ago with a woman who was a patient in the Middleſex hoſpital. She was between forty and fifty years of age, and laboured under a violent hæmorrhage from the uterus, without any particular pain in the region of that viſcus, and without any ſigns of ſcirrhus in it or its appendages. She was very much reduced in fleſh and ſtrength; and he obſerved her daily to ſink under the continuance of the diſcharge, although various means were employed to check it. He ordered her to take twenty drops of tinctura ſaturnina every four hours in a convenient vehicle. The third doſe of this mixture leſſened her flux, but produced a moſt violent colic. The apothecary very prudently ordered her to deſiſt from the tincture, and gave her an opiate. The colic, however, did not yield ſoon or eaſily. But the pain was at length removed by repeated doſes of opium on the third day, and ſhe was purged with cathartic ſalt.

On the fourth or fifth day the hæmorrhage re-

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returned with as much violence as before. Dr Reynolds determined again to have recourse to the same medicine, and to try at the same time to prevent its mischievous effects upon the bowels. Concluding that the lead had excited a peculiar spasm in the bowels, and that this spasm yielded more readily to opium than any other means, he thought it probable that it might be prevented by exhibiting opium along with the preparations of lead. He therefore ordered fourteen drachms of the saturnine tincture, and two of the thebaic tincture, to be mixed together; and of this mixture he directed twenty drops to be taken every four hours in a little barley-water.

The event satisfied Dr Reynolds's utmost expectations; for in twenty-four hours the flux was very much diminished, and in forty-eight it entirely ceased. Not the least colic was now produced, though the medicine was afterwards taken morning and evening for several days successively. The belly was either spontaneously open, or was rendered so by the most gentle means. The poor woman went out of the hospital in good health: she

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ſoon recovered her fleſh and ſtrength; and Dr Reynolds ſaw her two years after, when ſhe continued well.

Encouraged by the ſucceſs in this caſe, Dr Reynolds adds, that he has ſince exhibited the ſame mixture in the ſame doſe to ſeven other patients labouring under hæmorrhage. In all theſe caſes it has been uſed with ſucceſs, and without once exciting colic. Till lately he has never uſed the ſaccharum ſaturni: But he obſerves, that within the laſt four months he had employed it in three caſes. The firſt caſe in which he adminiſtered it was that of a young gentleman labouring under an hemoptyſis. He gave it in the following form:

℞ Sacch. ſaturn. gr. i.
Conſ. roſ. rub. gr. iv.
Tinct. theb. gut. iii. f. pil. ſextis horis ſumenda.

In two days the ſal. plumbi was increaſed to a grain and a half, and the tinct. thebaica to five drops, in each pill; which he continued for ſeven or eight days.

Before he took this medicine, although he had been bled ſeveral times, had taken nitre

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and other neutral ſaline medicines freely, and had been reſtrained from all food excepting rennet-whey, barley-water, and fruit, his pulſe had been full and hard, and had beat 108 ſtrokes in a minute. After he had taken it four days, his pulſe became ſoft and leſs full, and beat no more than ſeventy ſtrokes in a minute. The ſpitting of blood ceaſed on the fourth day from his taking this pill, and did not return. During the time of his taking it, he had regularly two motions every day; and he never once complained of the leaſt pain in his bowels.

The ſecond caſe was that of a lady in her fifty-ſecond year, labouring under an uterine hæmorrhage. She took the ſal. plumbi at firſt to the extent of half a grain, with two drops of thebaic tincture, and afterwards to the extent of a grain, with four drops, made into a pill, with a little conſerve of roſes. It had the happieſt effect on the hæmorrhage without any injury to the bowels; and ſhe was ſoon reſtored to perfect health.

The third caſe was that of a man in his thirty-ſixth year, labouring under an hæmorrhage from the noſe, and who had lately been affected

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affected with a very ſevere venereal complaint, for which he had been ſalivated. He took the ſal. plumbi to the extent of a grain and a half, united with four drops of the thebaic tincture, every ſix hours for a week, with the effect of preventing any return of the bleeding, and without any ſenſation of colic.

Dr Reynolds concludes with remarking, that it is by no means his intention to recommend the indiſcriminate uſe of theſe medicines, being fully aware of their deliterious qualities: but that his only wiſh is to mention the manner in which he has uſed them with effect and with ſafety. And if the combination here uſed be in other caſes attended with ſimilar ſucceſs, it will be of no ſmall importance in the practice of medicine.

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X.

Some Experiments made upon Rum, in order to ascertain the cause of the Colic frequent among the Soldiers in the Island of Jamaica in the year 1781 *and* 1782. *By* John Hunter, *M. D. Physician to the Army.* Vide *Medical Transactions, Vol. II.* 8vo, London.

WHEN Dr Hunter acted as physician to the army in Jamaica, a colic, in all its circumstances and in its consequences resembling the painter's colic or colica pictonum, prevailed among the soldiers at different times and in particular situations; while at other times, and even at other places of the island at the same time, the troops were not affected by it. Every circumstance which might tend to discover the cause of this disease became an object of importance, both on account of the violence of the symptoms and

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and the great number who were ſeized with it. Add to this, that it often terminated either in a palſy of the extremities, or in ſuch a degree of weakneſs as to render the man incapable of future ſervice.

Dr Hunter's inquiries to diſcover the cauſe of this affection ſeem to have been conducted with no leſs judgment than ſucceſs: While at the ſame time he has, we are hopeful, been equally ſucceſsful in pointing out a very eaſy mode by which it may afterwards be prevented among troops in ſimilar ſituations.

He obſerves, that among the practitioners in the iſland different cauſes were aſſigned for this diſeaſe. All theſe, however, might be reduced to three; bad water, acid fruits, and bile. It was firſt, therefore, neceſſary to inquire how far there was reaſon to believe that any of theſe ſuppoſitions were well founded.

The inhabitants of Spaniſhtown, he obſerves, uſed the ſame water with the ſoldiers, both being ſupplied from the river; yet neither they nor the officers ſuffered from the colic, as they moſt undoubtedly would have done had the cauſe been in the water. He

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readily admits, that acid fruits will ſometimes occaſion an affection of the bowels. But then the diſeaſe is attended with looſeneſs; while an obſtinate coſtiveneſs was the characteriſtic ſymptom of the colic of which he here treats. He farther adds, that its attacking one regiment, while another ſimilarly ſituated almoſt entirely eſcaped it; its prevailing among the ſoldiers in Spaniſhtown at one time, and in Kingſtown at another, while in both places the officers and better ſort of people did not ſuffer at all; are certain proofs that it was not to be imputed to any common cauſe, as air, water, or fruits, to which all had equally acceſs. The ſuſpicion of its ariſing from bile was, he tells us, entirely founded on bile being frequently diſcharged by vomiting during the diſeaſe. But it is, he obſerves, well known, that ſtrong vomiting, from whatever cauſe it proceeds, eſpecially when it continues for ſome time, will bring up large quantities of bile. Here, therefore, he conſiders its appearance as ſolely depending on the retchings; and bile, he obſerves, might with equal juſtice be ſuppoſed to be the cauſe of ſea-ſickneſs as of colic.

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Thus then it appeared that in theſe cauſes there was nothing ſatisfactory. But the ſtrict reſemblance between the diſeaſe which here occurred and that to which the workers in lead are ſubject, afforded a ſtrong preſumption that they were owing to the ſame cauſe. He was therefore led to inquire in what way this poiſonous metal could get into the conſtitution. As it was a very common opinion among the inhabitants of the iſland that the colic proceeded from drinking new and bad rum, and as he could not diſcover any other ſource for the introduction of lead, he was led to make ſome experiments on the rum taken from the barracks of thoſe regiments where the diſeaſe prevailed.

He prepared a teſt for diſcovering the preſence of lead, by infuſing one part of orpiment and two parts of quicklime in about twelve parts of rain-water. He added a few drops of this liquor to ſmall quantities of the rum to be tried in wine-glaſſes. Upon this addition the rum became evidently of a darker colour, and depoſited a browniſh ſediment. After the rum was evaporated, the reſiduum was of a deeper colour than what remained

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after the evaporation of pure rum. When the fluid employed as a teſt was added in the ſame proportion to ſpirit of wine nearly of the ſame ſtrength as Jamaica rum, it produced ſomewhat of a milky appearance, and ſoon after a light-coloured ſediment; and when the ſpirit was evaporated the reſiduum was of a light colour. After this, Dr Hunter took four ſpecimens of different kinds of rum indiſcriminately from a great number which had been made within the eight preceding months. Upon examining theſe with the teſt, one of them was not changed; but the other three became of a darker colour, though of different ſhades. After the evaporation of the rum, the reſiduum in the firſt mentioned was whitiſh like that of ſpirit of wine; in the other three it was of a dark brown colour, in the worſt of them approaching to black. From theſe trials he could have no doubt that there is often a ſlight impregnation of lead in new rum, in whatever way it may be introduced.

Having thus aſcertained the preſence of lead in the rum, to which there can be little doubt that this colic is to be attributed, he

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next inquires from what ſource it is derived. From obſerving the action which rum has upon lead, and from examining the compoſition of ſome of the worms uſed in diſtilling this ſpirit, where lead is for cheapneſs ſubſtituted to tin, he concludes that the impregnation ariſes from this ſource. And he imputes this impregnation exiſting more frequently in rum than in home ſpirits, to the worms uſed in the Weſt Indies being often of a baſer metal than thoſe uſed in the home diſtillery, to more acid ariſing in the diſtillation of rum, to the diſtillations not being ſo often as with home ſpirits, and to the rum finding its way into immediate uſe. For it is to be obſerved, that in old rum no impregnation is to be detected. By keeping, the rum entirely depoſites the lead, if it ever contained any.

From theſe circumſtances, the neceſſity and propriety of directing that the rum with which troops are ſerved ſhould be old is ſufficiently manifeſt. Dr Hunter does not take upon him to ſay what length of time is neceſſary for the depoſition of the metal. But it is the common opinion of the inhabitants

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of the iſland, probably founded on obſervation, that rum loſes its noxious quality in the ſpace of one year. Hence in the contracts made for rum, this age ſhould always be a neceſſary condition. But the troops in the Weſt India iſlands are not merely in danger from the rum which is furniſhed to them; they are in ſtill more danger from what they purchaſe themſelves at the ſmall retail-ſhops. For there, new ſpirits of the worſt quality are ſold; and this ſpirit many of the ſoldiers are apt to prefer, as taſting both ſtronger and hotter. It is not, however, likely either that the retailers of this noxious ſpirit, even if convinced of its pernicious effects, would deſiſt from their trade, or that the ſoldiers would give up drinking it, although well aſſured of its being the cauſe of the worſt diſeaſes. It becomes, therefore, of conſequence to aſcertain a cheap, eaſy, and effectual method of doing away the impregnation of lead, without at the ſame time injuring the ſpirit. This, Dr Hunter obſerves, may be done by different additions; as for example, by the vegetable alkali and by the muriatic acid.

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But he conſiders the vitriolic acid to be preferable to any other ſubſtance for this purpoſe, as it precipitates the lead moſt quickly and moſt effectually; while a very ſmall quantity of it will be ſufficient to do away the ſtrongeſt impregnation of lead that is ever found in any rum. He concludes, that even three drops of the ſtrong ſpirit of vitriol would do away the impregnation in two gallons of rum. From this addition, even ſuppoſing that the rum contained no lead, it is evident that neither the ſlighteſt bad effect, or even diſagreeable taſte, could ariſe; while the rum, not uſed in its new ſtate, would continue equally well ſuited to be in other reſpects meliorated by age.

It is therefore earneſtly to be wiſhed that the diſtillers of rum in the Weſt Indies would in all caſes add to the new ſpirit a proper proportion of this acid, before they allow it to go out of their own hands, and particularly before they diſpoſe of it to retailers in the iſlands. If by this means the diſeaſe ſo frequent and ſo fatal in the Weſt India iſlands, and there well known by the title of the

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the Dry-belly-ake, can be prevented, Dr Hunter may juftly be confidered as intitled to their warmeft thanks for the attention he has beftowed in inveftigating the caufe of this painful and dangerous difeafe, and in pointing out the mode of counteracting it.

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XI.

An Account of a ſingular cure of a Dropſy. By George Pearſon, *M. D.* Vide *Medical Tranſactions, Vol. III.* 8vo, London.

ALTHOUGH the practice of diſcharging dropſical water by ſcarifications of the inferior extremities may be conſidered as of very old date, yet it has never been generally adopted. And this indeed is not to be wondered at, when we conſider the very great inconvenience with which it is frequently attended; not only giving riſe to ulcers never healing, but ſometimes producing gangrene proving ſpeedily fatal. The following caſe, however, ſerves to ſhow with what freedom and with what advantage it may be employed in ſome habits.

A ſurgeon near Doncaſter, in the 25th year of his age, of a plethoric habit, who had been ſubjected to frequent catarrhs from cold, was, in

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in November 1779, affected with a confiderable fwelling of the inferior extremities, and fome fwelling of the hands and arms. Notwithftanding various remedies, thefe dropfical fymptoms increafed in fuch a manner, that at the end of about three months there was a general anafarca, a confiderable afcites, and many fymp toms of hydrothorax.

About this time a new circumftance in the cafe attracted Dr Pearfon's attention. The patient obferved, after awaking in the morning, that his bed was wet; and this moifture was difcovered to be owing to his having fcratched off the cuticle from two pimples on the upper and interior part of the right thigh, from whence there oozed a great quantity of lymph. This difcharge continued from the end of January till the middle of April, when it ceafed, the excoriations cicatrizing. The evacuation feemed to relieve his breathing; for if, by preffure or any other caufe, it was ftopped even for a fhort time, the oppreffion, anxiety, and laborious refpiration, were increafed. After this he applied a fmall blifter to each leg, and to the upper part of each hip, which difcharged much lymph; but they

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ſoon healed without any unuſual inflammation.

He was for ſome time after affected with ſickneſs of ſtomach and vomitings, by which large quantities of water were thrown up. But about the beginning of May theſe began to abate, and his appetite became voracious. Having tried various purgatives and diuretics to little purpoſe, he ordered nine punctures to be made with a lancet juſt below the calf of his leg. From theſe a conſiderable quantity of water was diſcharged: for in fifty-ſix hours Dr Pearſon ſaw ſix quarts of it meaſured; and he thinks that the cloths put round the legs, which were frequently changed, could not contain leſs than four more. This lymph did not, Dr Pearſon obſerves, coagulate by the heat of boiling water; but upon evaporation it left a ſediment which conſiſted chiefly of ſea-ſalt. It contained fixed air, as appeared from its rendering lime-water milky. From this diſcharge all the ſwellings were leſſened, excepting thoſe of his legs and thighs, and he became very cheerful.

Theſe punctures healed in a few days with-

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without inflaming. When they healed, he applied a ſcarificator with ten lancets to another part; and between the end of May and the end of Auguſt he had been ſcarified with this inſtrument on different parts of his legs and thighs forty-four times. According to the beſt calculation, twenty gallons of water had been drained off in this way. During the courſe of it, he took a journey to London; and the diſcharge was ſo conſiderable, that the chaiſe in which he travelled was kept conſtantly wet, and his ſhoes were often full of water.

From the time that he began the ſcarifications, he took no medicine excepting the decoction of bark with chalybeate wine; and while in the neighbourhood of London, he drank the Iſlington Spa-water. Dr Pearſon ſaw him a year after, when he was informed that he had gradually acquired his uſual ſtrength, and was then in perfect health.

XII.

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XII.

An Account of a Diſeaſe occaſioned by tranſplanting a Tooth. By William Watſon, *M. D. Fellow of the College of Phyſicians, and Vice Preſident of the Royal Society.* Vide *Medical Tranſactions, Vol. III.* 8vo, London.

AMONG the modern improvements in ſurgery, that of tranſplanting teeth has unqueſtionably no inconſiderable ſhare of merit. For there can be no doubt that a tooth taken from one head and properly introduced into another, will remain faſt in the ſocket, aſſiſting equally with the other teeth in maſtication, preſerving diſtinct articulation in ſpeech, and preventing any deformity in the mouth. But while this operation in the hands of ſkilful practitioners is in general followed by theſe conſequences, it ſometimes happens that it is productive of a diſeaſe of a

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very dangerous nature: And in the paper before us, we are presented with a well authenticated and very accurate history of a case of that affection.

An unmarried lady, in the twenty-first year of her age, of a delicate habit, but in other respects in perfect health, observing one of the incisores of her upper jaw to become black and carious, determined on having it replaced by a sound tooth. This was accordingly done by an able dentist; the tooth which was introduced being taken from the mouth of a person apparently healthy in every particular. The tooth fitted exactly, and fastened exceedingly well; so that the dentist, on account of its firm state, removed the silk employed to fasten it to the neighbouring teeth sooner than he was accustomed to do. But about the end of a month, her mouth, which had continued all that time a little tender, became very painful. Her upper gums were at first inflamed and enlarged; afterwards they were discoloured and ulcerated. This ulceration spread very fast, insomuch that the gums of the upper jaw were corroded away and the alveoli left bare. Before another

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ther month was at an end, the ulceration occupied the whole ſpace under the upper lip between the teeth and the noſe; it extended likewiſe to the cheeks and throat, which were corroded by large deep and fetid ulcers. Soon after this, part of the alveoli of the upper jaw became carious, one of her teeth dropped out; and in a few days a ſecond tooth, together with the tranſplanted tooth, which hitherto had remained firm in its place.

About this time blotches appeared on her face, neck, and various parts of her body; and ſeveral of theſe became ulcerated ſores. The fetid diſcharge from the mouth and throat had for a conſiderable time deprived her of ſleep; and the ſoreneſs of the parts had prevented her from taking nouriſhment. And, in addition to theſe, the ſoreneſs from the external ulcers induced ſuch a degree of fever that her death was ſoon expected.

When Dr Watſon was conſulted, concluding that all her fluids were in a moſt putrid and acrimonious ſtate, he directed the Peruvian bark combined with gum myrrh in large doſes, both being found by experience to be

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powerful antiſeptics; and theſe were conjoined with aſs-milk.

After this plan had been tried for ſome days, no benefit ſeemed to reſult from it; and it was alſo found, that from the enfeebled ſtate of her ſtomach ſhe could not take theſe medicines in ſufficient quantity. It was therefore determined to make trial of mercury as another powerful alterative. A ſcruple of calomel made up with the rob ſambuci was formed into ten pills; and one of theſe was directed to be taken once or twice a-day as her bowels would bear them. Of theſe ſhe took fourteen; when, on account of ſevere griping and purging, which could ſcarce be mitigated by large doſes of thebaic tincture, they were laid aſide. But during the time ſhe took theſe, the ulceration of her mouth and cheeks did not ſpread: they were leſs painful, and of a milder appearance. The blotches on her face and body grew paler; ſuch of them as had ulcerated healed apace, and no new one appeared. From this Dr Watſon thinks it was manifeſt that mercury was the proper corrector and true alterative in this caſe.

On

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On this account, as it was found her bowels would not bear mercury by the mouth, it was directed to be rubbed into her legs and thighs twice a-day in ſmall doſes. In about ten or twelve days her griping and purging returned with violence; the ointment, therefore, was obliged to be diſcontinued. The good effects of the mercury, however, were very apparent: for at this time the blotches were all gone; the ulcerations in her face and body were completely healed; and thoſe of her mouth were nearly ſo. It did not appear that during this part of the treatment the mercury took in the leaſt to her gums or ſalival ducts; an event much to be dreaded.

At this period, however, ſhe continued to be in a dangerous ſituation, being much weakened, labouring under frequent returns of feveriſh heat, and being every night oppreſſed with colliquative ſweats. To obviate theſe, ſhe returned to the uſe of aſſes milk and other reſtoratives, and took as much decoction of bark as her ſtomach and bowels would bear. And as the weather was fine, ſhe was frequently taken a few miles in a carriage as her ſtrength would permit. Du-

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ring this period of her illneſs, Dr Watſon remarks that ſhe became deaf in a great degree, and that at times ſmall portions of the carious alveoli exfoliated, and came away with the ſloughs.

By the means related, the ſymptoms mentioned above grew milder, and ſhe recovered ſome degree of ſtrength. She now expreſſed a deſire to return to her uſual reſidence about eighty miles from London. This was readily agreed to, as a change of air bade fair to aſſiſt her. She was directed to proceed by ſuch ſhort ſtages only as her health would bear; and ſhe was adviſed as ſoon as ſhe got home, to continue the decoction of bark with aſſes milk and other reſtoratives, and to return to ſmall doſes of mercurial ointment. This laſt was ſtrongly enjoined; for although the ſymptoms for which the mercury had been directed were totally ſubſided, yet the quantity uſed both externally and internally had, on account of her weak and irritable bowels, been but ſmall when compared with the magnitude of her diſeaſe. And it is well known, that to prevent a return of thoſe ſymptoms

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toms for which mercurials are particularly adminiftered, they fhould be perfifted in for fome time after the fymptoms have difappeared. But upon her return to the country fhe became no better; and without any new complaint, her ftrength gradually leffened, till death put an end to her fufferings.

After having given this hiftory of the difeafe, Dr Watfon fubjoins fome obfervations refpecting it. He thinks it very remarkable that a tooth drawn from an apparently healthy young perfon, and inferted into the jaw of another young perfon of irreproachable conduct, fhould have fuch baneful effects, and convert the fluids, firft of the part near the infertion, and afterwards of the whole habit, into a putrid corroding fanies. At firft, he obferves, the caufe operated but gently, and a tendernefs only of the gums was perceived; but afterwards its operation was the moft active and violent he had ever feen in any diforder at all fimilar to this. As its progrefs was not impeded by the moft powerful antifeptics in liberal dofes, and as it gave way to mercurials even in fmall dofes, there is good

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ground for ſuggeſting that the taint was truly venereal.

Although Dr Watſon be fully aware of the great ſubtilty of animal poiſons, and admits, that by a very ſmall quantity of virus the venereal as well as the variolous infection may be produced, yet to this ſuppoſition there were here great difficulties. The perſon from whom the tooth was taken was perfectly well, and never had any venereal taint. The gums and teeth from obſervation were perfectly ſound; the tooth after being drawn was ſoaked in warm water, and afterwards before inſertion waſhed and wiped as clean as poſſible: ſo that even, for the ſake of argument, ſuppoſing diſeaſe, it is difficult to conceive how an uninfected part can convey contagion.

On the other hand, admitting that the young lady, who is the ſubject of this paper, had received the infection in any other way, it is difficult to conceive how it ſhould have had ſo violent an effect upon the mouth, and left other parts, as the pudendum, entirely free. In whatever way therefore the cauſe of this malady is ſought for, Dr Watſon thinks

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thinks that great difficulties prefent themfelves. But although the caufe of this affection may ftill be confidered as involved in fome obfcurity, yet the faithful and accurate reprefentation of facts here given may be confidered as fome progrefs both towards afcertaining this and the method of cure.

XIII.

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XIII.

On the Efficacy of the Spiritus Vitrioli Dulcis in the cure of Fevers. By James Carmichael Smyth, *M. D. F. R. S. Physician Extraordinary to his Majesty.* Vide *Medical Communications, Vol. I.* 8vo, London.

THE vitriolic acid, Dr Smyth obſerves, has long been known as an uſeful remedy, and ſtands highly recommended by Riverius and Sydenham, for allaying febrile heat and thirſt, abating inflammation, reſiſting putrefaction, and checking hemorrhage. But the ſpiritus vitrioli dulcis, a compoſition principally of the volatile vitriolic acid and alcohol, differs very materially from it; and when prepared in the manner directed by the London college, it ſhows little or no acidity to the taſte, but has a peculiar pungency reſembling vitriolic æther. And indeed in the pharmaçopœia of the Edinburgh college, the ſpiritus

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ſpiritus vitrioli dulcis is directed to be made by adding two parts of rectified ſpirit of wine to one of vitriolic æther; which gives a medicine very nearly, if not preciſely, the ſame with that of the London college, and poſſeſſing ſome advantages both with regard to the determinate degree of ſtrength and facility in the mode of preparation.

This medicine, though long kept in the ſhops, was not frequently employed in practice; and, according to the beſt information Dr Smyth could obtain, never employed in the cure of fevers prior to the year 1769. From reflecting on the ſenſible qualities and compoſition of this medicine, he was led to imagine that he ſhould find it uſeful as a cordial and antiſeptic in caſes of the putrid and malignant kind. Experience convinced him that his conjecture was well founded, and that it was poſſeſſed of powers even beyond what he had at firſt ſuſpected. And in the eſſay now before us, he has communicated the fruits of his experience to the public; and although he confines himſelf to the mere duty of an hiſtorian, yet the facts he has related well deſerve attention.

Dr

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Dr Smyth here gives us a particular account of five cafes, being the firft in which he adminiftered it. As thefe are extracted from his journals minuted down at the time, and from reports taken by himfelf at the bedfide of the fick, there can be no room for entertaining any doubt either as to their truth or accuracy.

The firft cafe is that of a young woman about twenty years of age, who had been feized with a fever about five days before fhe came under Dr Smyth's care. On the 25th of October 1768, he found her affected with great weaknefs, lownefs, and anxiety, oppreffion at the præcordia, with frequent fighing; and conftant drowfinefs, being always afleep unlefs roufed by fpeaking or calling to her. Her tongue was moift and white, her neck and breaft covered with many fmall petechiæ of a dark brown colour, the heat of her body confiderably increafed, and her pulfe about 120 in a minute. About five o'clock in the afternoon of that day, fhe began to take the dulcified fpirit of vitriol in the following form;

℞ Spi-

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℞ Spiritus vitrioli dulcis, drachmas tres.
Aquæ puræ, libras duas.
Sacchari albi, uncias duas. M.

Cap. uncias duas ſecunda quaque hora.

The day following her pulſe was at 108; ſhe had ſweated after taking the medicine, had reſted well in the night, and had leſs of the oppreſſion and anxiety. And on the 27th ſhe continued ſtill eaſier, with her pulſe at 94; but being coſtive with the continuance of her mixture, a bolus was preſcribed for her, containing a ſcruple of rhubarb and ten grains of nitre. From this ſhe had three ſtools, and next day her pulſe was at 88. Though ſhe ſtill ſlept a good deal through the day, ſhe had no complaint of weakneſs.

On the 29th ſhe was free from all complaints excepting a conſtant drowſineſs. Her pulſe was now at 86. For the three ſucceeding days it gradually diminiſhed in frequency till it came to 65. Her appetite returned, her medicine was diſcontinued, and ſhe was ſoon diſmiſſed cured.

The ſecond caſe here related by Dr Smyth is that of a young man who was brought to the hoſpital on the 25th of October, for a fe-

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ver with which he had been ſeized about a week before. At the time of his admiſſion his ſkin was extremely hot, his pulſe beat 100 in a minute, he complained much of anxiety, debility, and dejection. When he endeavoured to put out his hands or to ſhow his tongue, they were affected with a remarkable tremor. His tongue was white and moiſt, his countenance fluſhed, and the white of his eyes had a turbid appearance. There were florid petechiæ on his neck and breaſt, with a red raſh all over his breaſt and arms. He was ordered the dulcified ſpirit of vitriol in the ſame manner as in the preceding caſe. The next day his pulſe was at 80, and he ſaid he was perfectly eaſy. It continued gradually to diminiſh in frequency for five days; by which time it had fallen ſo low as 56 ſtrokes in the minute. The tremor, petechiæ, and raſh, were now entirely gone, his countenance was more lively, the ſpiritus vitrioli dulcis was laid aſide; and in a few days he was diſmiſſed cured.

The third caſe is that of a woman in the 50th year of her age, admitted into the hoſpital on the firſt of November. She was of

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a delicate conſtitution, and had for many years been ſubject to hyſterical complaints. About a fortnight before her admiſſion, ſhe had been ſeized with a ſhivering, ſucceeded by heat, headach, pain of her back, violent vomiting and purging. The vomiting had ſoon ceaſed, but the purging continued at the time of her admiſſion, although not ſo violent as at firſt. She was alſo then affected with headach, pain of the back, anxiety, weakneſs, lowneſs, and great thirſt. Her pulſe was 120 in a minute. The ſpiritus vitrioli dulcis was ordered, as in the two following caſes, with this difference only, that inſtead of three drachms, half an ounce was put to each quart of the water. She was directed likewiſe to uſe the decoctum album for common drink. The day following her pulſe was at 92; ſhe had taken her medicine only three times; her headach ſtill continued, but the anxiety and pain of her back were greatly relieved. And on the ſucceeding day, though ſhe had ſlept but little in the night, the purging had entirely ceaſed, her ſkin felt temperate, her pulſe was at 72, and ſhe had no complaint but giddineſs and weakneſs.

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For this ſhe was directed to uſe a decoction of the bark; and in a few days ſhe was diſmiſſed cured.

The fourth caſe is that of a young woman in the nineteenth year of her age, who was admitted on the firſt of November. About ſix days before, ſhe had been ſeized with a fever and ſore throat, attended with headach and vomiting. The palate, uvula, and tonſils were ſwelled and greatly inflamed. The inflammation was of a crimſon colour, with whitiſh ſloughs on the tonſils and uvula. She had great pain in ſwallowing and even in ſpeaking, and ſometimes a degree of difficulty in breathing. There was a red efflореſcence on her face and arms. Her pulſe was 120 in a minute. She was ordered the ſpiritus vitrioli dulcis in the ſame manner as in the two firſt caſes, and alſo a gargle for her throat. Next day Dr Smyth found that ſhe had ſweated conſtantly, though not profuſely, from the time ſhe began to take the medicine. She had a tolerable night, being neither ſo hot nor having ſo much difficulty of breathing as before. There had been a ſlight hemorrhage from her noſe both during the night and in the

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the morning. The inflammation and ſwelling of the fauces were much abated; but the white ſloughs on the uvula and tonſils ſtill remained; and the red efflorefcence was ſtill to be obſerved on one arm. She could now ſwallow with greater eaſe, and ſpeak more diſtinctly; her pulſe was 78, and full; but ſhe complained of much giddineſs. The day following all her ſymptoms continued eaſier; but ſhe had again loſt a conſiderable quantity of blood by the noſe, and was ſick at ſtomach. Upon inquiry, Dr Smyth found that her menſes were obſtructed, and that this was the uſual period of their appearance. But in a few days all her remaining ſymptoms diſappeared; and ſhe was diſmiſſed from the hoſpital perfectly cured.

The fifth and laſt caſe related in this eſſay, is that of a woman in the fortieth year of her age, who in the end of October had been ſeized with febrile ſymptoms, accompanied with ſore throat, ſickneſs, vomiting, and purging. The vomiting was of ſhort duration: The purging continued for a day or two longer; but, on the ſecond of November, when ſhe was admitted into the hoſpital, it had entire-

ly ceafed. Her complaints then were, a forenefs and ftiffnefs of her neck, violent headach, and pain in her limbs. Her arms and hands appeared fwelled, and there was a red efflorefcence on her arms. The inflammation of the fauces was in a great meafure confined to the velum pendulum palati, the uvula, and the amygdalæ, which were of a deep red colour. Her pulfe was 130 in a minute. She was ordered the fpiritus vitrioli dulcis, as in the three firft cafes. The next day her pulfe ftill continued at 130. She had fweated a little in the night; fhe found herfelf no better, and thought that her headach had been rather augmented fince fhe began to take the medicine.

On the fucceeding day, the fourth of the month, her throat was not fo much inflamed, and the inflammation was of a paler colour; but her pulfe was 140: and being coftive in her body, fhe was ordered a glyfter, with a folution of cream of tartar in water for common drink. The dofe of fpiritus vitrioli dulcis was increafed, by being given in the following manner:

℞ Spi-

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℞ Spiritus vitrioli dulcis, drachmam unam.
Aquæ puræ, uncias quatuor.
Syr. ſimp. drachmas duas. M.
Fiat hauſtus, tertiis horis ſumendus.

Next day her pulſe was at 130. She had got out of bed in the morning, and looked tolerably well; her tongue was clean; the inflammation of her throat was much diminiſhed; and ſhe had no anxiety. The cream of tartar drink had been followed by ſome looſe ſtools. She thought that her medicine heated her much, although it occaſioned no ſweating; the redneſs of her arms remained; and ſhe complained much of pain and weakneſs in her limbs. In this ſituation ſhe was ordered to loſe twelve ounces of blood, and to take the ſpiritus vitrioli dulcis in the quantity and form firſt preſcribed. On the ſucceeding day, the ſixth of November, the heat of her body was temperate, the efloreſcence on her arms entirely gone, and there was only a ſlight redneſs remaining on the uvula and tonſils; but the headach and pain of her limbs ſtill continued; her pulſe was ſtill 130 in a minute, and intermitted after every ſixth or eighth pulſation. She thought, however,

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that the medicine, even in the form in which it was now given, made her hot and thirſty. And as it appeared to have no effect in relieving her pains, it was diſcontinued, and a volatile julep was ſubſtituted in its place; which agreed well with her, and ſhe ſoon recovered.

After having related theſe caſes, Dr Smyth obſerves, that whoever conſiders them with attention, and is acquainted with the uſual progreſs of fevers accompanied with ſymptoms ſimilar to thoſe deſcribed, will readily allow that theſe examples, though not very numerous, are ſufficient to evince the efficacy of the ſpiritus vitrioli dulcis. Its power, he thinks, in removing the anxiety and reducing the frequency of the pulſe, was too remarkable to eſcape the notice even of the moſt careleſs of the profeſſion. He adds, that it would be very eaſy for him to give more examples of recent date, and to add to them ſome reſpectable teſtimonies from others: But from a deſire to avoid the tediousneſs of many caſes, he concludes his paper by giving the reſult merely of his farther experience.

He

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He obſerves, that any phyſician who ſhall give the dulcified ſpirit of vitriol indiſcriminately in fevers, and expect to meet with ſucceſs, will in all probability be diſappointed. For although he repreſents it as of undoubted efficacy in certain caſes, he adds, that it is by no means of general application. In acute rheumatiſm, and in the various forms of inflammatory fever, he conſiders it as extremely improper. And in hectic and pulmonic caſes, the advantage derived from it is trifling or doubtful, In remittent and common putrid fevers he has ſometimes alſo preſcribed it without any apparent benefit. In ſuch caſes, however, he has never obſerved any bad conſequences from it; and even when it failed of ſucceſs alone, it has been productive of the beſt effects when joined with ſmall doſes of emetic tartar. In the low ſtate of putrid fevers, he confidently affirms, that it is one of the beſt cordials; and he thinks that it greatly aſſiſts the bark in reſiſting the ſeptic tendency of the diſeaſe.

But of all caſes, thoſe to which, in his opinion, it is moſt peculiarly adapted, and in which he has ſeen it productive of the moſt

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fudden and furprifing effects, are thofe fevers occafioned by contagion, or what are commonly called the jail or hofpital fevers. In thefe, as its cordial powers are more immediately neceffary, fo they are in general more evident and ftriking. Its operation alfo as a diaphoretic is here, he thinks, of the utmoft confequence; for it produces a perfpiration or fweat, the only method by which, in his opinion, thefe fevers, unlefs in the beginning, can poffibly be cured. He adds, however, in a note, that during his attendance upon the Spanifh prifoners at Winchefter, in the fummer of the year 1780, when a very fatal jail fever prevailed among them, he himfelf fuffered two violent attacks of the diforder; both of which he was fortunate enough to cure by a ftrong antimonial emetic, and afterwards by promoting a profufe fweat. This circumftance may, we think, be confidered as an additional proof of the power which fome have afcribed to emetics, of cutting fhort fevers of the very worft kind, even the plague itfelf, if exhibited at a fufficiently early period.

Upon the whole, he efteems the dulcified fpirit of vitriol a medicine of great efficacy

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in the cure of putrid fevers in general, and more particularly ſo of thoſe ariſing from contagion. And we ſhall be happy to find that the obſervations of others ſoon afford additional evidence of its utility to the degree that Dr Smyth alleges: for in that caſe, its introduction into practice, with a view to the cure of fevers, may juſtly be ranked among the moſt important diſcoveries lately made in the healing art. We are, however, ſorry to ſay, that from any trials which we have had an opportunity of making, we have not yet had any deciſive proof of its efficacy.

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XIV.

Experiments and Obſervations on the Quilled and Red Peruvian Bark; among which are included ſome remarkable Effects ariſing from the action of Common Bark and Magneſia upon each other: With Remarks on the nature and mode of treatment of Fevers, putrid Sore Throat, Rheumatiſm, Scrophula, and other Diſeaſes; in order to aſcertain the Caſes in which Bark may be adminiſtered, either alone or combined with other Remedies, to the beſt advantage. To which is added, an Appendix on the Cinchona Caribbæa. By Thomas Skeete, *M. D.* 8vo, London.

THE treatiſe now before us was originally written under the form of a diſſertation to be preſented to the Harveian Society of Edinburgh; and ſuch was the opinion the ſociety then formed of its merit, that they conferred a prize-medal on the author. Since that

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that time, however, the author has beſtowed no inconſiderable ſhare of attention on this ſubject; and after having made a great number of additional experiments and obſervations, he has now preſented it to the public in an extended and improved ſtate.

The author begins by giving a general hiſtory of the Peruvian bark, and an account of its ſenſible properties. After ſome account of the botanical character and principal diſtinctions which have been pointed out in the bark, he obſerves, that ſuch is the variety in this article, that it can be purchaſed for any ſum between the extremes of two ſhillings and ten ſhillings per pound. Being led to inquire into the cauſe of this difference, he found that the bark is originally brought to market in three forms; the common, the ſecond or middling, and the beſt. The cheſts of common bark weigh about two hundred and fifty pounds each; and in theſe there is ſcarcely any thing but the courſe woody pieces, which are chiefly uſed for powder and for making into tinctures. The cheſts of the ſecond, which are of much the ſame weight, are made up of a mixture of bad and good,

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and are thoſe which the druggiſts garble or ſeparate into different parcels. They yeild upon an average twenty-five pounds of quilled bark, and as much of coarſe or common: the remaining part conſtitutes the ſtandard middling bark, which ſells in general about five ſhillings per pound. The beſt kind, which ſeldom weighs above one hundred and twenty or thirty pounds per cheſt, is almoſt all of the twig and quilled bark, and is only ſifted before it be ſold. This at particular times bears the high price of ten or twelve ſhillings per pound; but may be purchaſed in general for ſeven or eight. This difference in quality is a circumſtance which well deſerves the attention of every practitioner. And indeed Dr Skeete obſerves, that he has more than once known this remedy exhibited in a ſtate of the moſt preſſing danger, when it was of ſo indifferent quality, that ſcarcely any other effect than that of unneceſſarily loading the ſtomach could be expected from it.

He next proceeds to an analyſis of the quilled bark, with a compariſon between it and the flat ſpecies. And here, from experi-

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ments made in the way of diſtillation, he aſſerts, contrary to the opinion entertained by Dr Irving, in a late treatiſe on this ſubject, that the liquor collected in the receiver could not, on the ſtricteſt examination, be perceived to contain any thing like an eſſential oil; and from theſe diſtillations it appeared that the bark conſiſted chiefly, if not entirely, of fixed parts. From infuſions of bark with proof and rectified ſpirits, Dr Skeete found the ſolvent power to be at leaſt three to one in favour of the pure rectified ſpirit: and in this particular his experiments contradict thoſe of Dr Percival, who ſeems to doubt the ſuperior ſolvent power of the rectified ſpirit. This, he obſerves, would not, *à priori*, be inferred, when it is conſidered that the bark, as well as many other vegetable ſubſtances, conſiſts both of mucilaginous and reſinous parts. But he thinks that the reaſon why proof-ſpirit is not a more powerful ſolvent than rectified, is, that the attraction exerted among the conſtituent parts of bodies, is weaker in proportion as they are more compounded: And thus, that the attraction between the water and ſpirit is ſo great,

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great, as to weaken the attraction of the former for the mucilaginous part of the bark; and that of the latter, or ſpirit, for its more reſinous particles.

From experiments made upon the bark with water, both in the way of infuſion and decoction, Dr Skeete concludes, that heat promotes the action of water upon bark; and conſequently that a decoction of it, prepared over a ſlow fire, is a more efficacious preparation than the cold infuſion, although contrary to the opinion of Dr Percival and many others. Dr Skeete was unable to perceive that the flavour of bark is injured by boiling, provided it be conducted with care. He indeed allows that the taſte of the decoction is more bitter; and therefore, perhaps, more diſagreeable than the infuſion: But it cannot, he obſerves, be expected to appear otherwiſe, when it is conſidered that an equal meaſure of the decoction contains a greater proportion of the active parts of the bark, as is evinced not only by its ſpecific gravity, but alſo by the teſt of chalybeates, with which it exhibits marks of greater ſtrength than the cold infuſion.

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From triturating bark with lime-water, Dr Skeete obtained a tranſparent infuſion; and when equal parts of this infuſion, and of water thoroughly impregnated with fixed air, were mixed together, no other effect took place than that which ſeemed to ariſe from dilution: For after remaining at reſt a whole day, the liquor continued clear, and without the ſlighteſt appearance of precipitation. From this Dr Skeete thinks it probable, that the lime-water and bark, in ſuch a preparation, are ſo chemically united, that the addition of fixed air is inſufficient to produce a decompoſition. This at leaſt ſeems to be the caſe with that portion of aërial acid which is capable only of being mixed with water. But if a larger proportion of the fixed air be thrown through a quantity of the infuſion from the pipe of a proper apparatus, the bark is ſoon obliged to part with the lime; it is rendered ſenſible by precipitation, and the infuſion at the ſame time loſes its rich red colour.

Dr Skeete having thus found that lime, in the ſmall quantity in which it is diſſolved in lime-water, increaſes the ſenſible properties of the

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the Peruvian bark, in the form of infuſion; and being fully ſatisfied that this is an uſeful remedy in particular diſeaſes, next determined to try the effects which would be produced on the bark by a large proportion of the ſame ſubſtance. Two drachms of bark in powder and one drachm of lime were carefully rubbed in a mortar for the ſpace of half an hour, with four ounces of water; and in proper time the mixture was filtered. But inſtead of the rich red colour which the infuſion with lime-water exhibited, this infuſion ſeemed ſcarcely to poſſeſs any of the properties of the bark. Thus it appears that lime, in a large proportion, united with the bark, forms a new compound, poſſeſſed of properties different from either of them in their ſeparate condition; and from want of attention to this diverſity of effects, ariſing from different proportions of the lime, ſome have, he thinks, very improperly condemned lime-water as a menſtruum for bark.

After theſe experiments with lime, Dr Skeete next relates the trials he made to aſcertain the action of magneſia upon Peruvian bark. This inquiry was ſuggeſted to him

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by Dr Liſter teacher of chemiſtry at Guy's Hoſpital; and by the obſervations made by Bergman in his eſſay on magneſia, which ſhow its power of promoting the ſolubility of different reſinous ſubſtances in water, although he does not ſeem to have made any trial with Peruvian bark. Dr Skeete conſiders his experiments on this ſubject as the moſt intereſting in which he has been engaged, and thinks they may be productive of real utility in the practice of medicine. The effects of magneſia upon the bark are, he thinks, clearly demonſtrated by the following experiment. Two drachms of Peruvian bark in powder and half a drachm of calcined magneſia, were rubbed together in a mortar with four ounces of diſtilled water for the ſpace of ten or fifteen minutes. The water was gradually added, ſo as to reduce the materials, in the firſt inſtance, to the ſtate of a paſte; and in this condition the friction was principally performed. The infuſion, when paſſed through filtering paper, was found to be poſſeſſed of the following remarkable properties: It had an exceeding deep red colour, ſuperior to the infuſion of common bark

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in lime-water. It was more bitter and aſtringent to the taſte than an infuſion of red bark. It produced a very deep black colour, with a copious precipitation upon the addition of a ſolution of ſal martis, while a ſimilar addition to a common infuſion of bark, occaſioned a moderate diſcolouration, and a ſmall precipitation only. It remained beautifully tranſparent for three or four days; and was ſo ſtrongly antiſeptic, that at the end of a week, in ſummer, it had ſcarcely made any advances towards fermentation, while an infuſion of bark, in ſimple water, fermented in two days. It exceeded in ſpecific gravity the infuſion of bark in lime-water, in a greater proportion than that exceeds the ſimple infuſion.

To determine ſtill more particularly the nature of this infuſion, ſeveral additions were made to it. Water impregnated with fixed air produced no other effect than that of ſimple dilution; but a ſmall quantity of the acid of ſugar immediately diſcharged the red colour, and cauſed a whitiſh precipitation. Hence it is obvious, he thinks, that the magneſia itſelf is diſſolved in the mixture in a ſmall proportion; and as calcined magneſia, added

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added to an infusion of bark, prepared in the common way with simple water, occasions no change in its colour or properties, we may, he thinks, conclude, that when bark and magnesia are rubbed together with water in the manner before mentioned, the magnesia enables the water to extract something from the bark which it could not have done alone; or what is more probable, they form a compound more active and soluble in water than pure bark.

The calcined magnesia which Dr Skeete employed, was carefully prepared by Mr Babington apothecary to Guy's Hospital, and had lost more than one half of its weight by calcination. After the trials he had made with it, his next object was to try the action of common magnesia, in order to determine how far the presence or absence of fixed air would assist in the explanation ot the effects which have been enumerated. He found, that when allowance is made for the weight occasioned by the presence of fixed air in the common magnesia, all the effects may be obtained from it in an equal degree with the calcined. Hence he thinks

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we are authorifed to conclude, that fixed air is by no means concerned in the remarkable changes which take place from the action of thefe fubftances upon each other. He tried experiments with chalk and the earth of alum, fimilar to thofe which he had performed with magnefia; but by thefe, altho' an equal degree of triture was employed, the action of the water on the bark was rather retarded than promoted. Hence he concludes, that the effects of magnefia upon many vegetable fubftances, conftitute a ftriking difference between it and the crude calcareous and agilaceous earths.

Dr Skeete next relates a number of experiments made by employing, as menftrua for bark, Jamaica rum, brandy, port-wine, vitriolic æther, dulcified fpirit of fal ammoniac, cauftic fpirit of fal ammoniac, and by adding water to bark on which fpirit had formerly acted, and fpirit to bark upon which water had acted. From thefe experiments it appeared, that neither water nor fpirit alone is capable of extracting entirely, the active parts of bark; but that they both exert fuch a degree of action upon it, that after

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ſucceſſive additions of either of them, the remaining part is much deprived of activity and ſolubility. After relating his experiments, he gives the following table; which exhibits at one view the powers of the different menſtrua which he tried with the quilled bark.*

Pure rectified ſpirit of wine extracted,	Gr. 14
Cauſtic ſpirit of ſal ammoniac, -	9
Brandy, - - -	7
Rum, - - - -	6
Dulcified ſpirit of ſal ammoniac, -	6
Infuſion with magneſia, - -	5½
Water in decoction, - -	5½
Lime-water, - -	4½
Proof ſpirit, - - - -	4
Port-wine, - - -	4
Mountain wine, - - -	4
Reniſh wine, - - -	4
Water in cold infuſion, - -	3½
Vitriolic æther, ſcarcely	2

Theſe trials, he thinks, enable him, in ſome degree, to determine on the nature of the conſtituent parts of bark. It has been

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proved, that both water and ſpirit are capable of acting with effect upon it; and he thinks it probable, that many of the different menſtrua operate according as they partake more or leſs of the properties of theſe. If therefore it be conſidered, that water acts upon mucilage, and not upon reſin, except by the intervention of the former, and that ſpirit, on the contrary, diſſolves reſin, and ſcarcely affects mucilage, we are, he thinks, certainly led to conclude, that bark conſiſts chiefly of mucilaginous and reſinous parts. But any attempt to aſcertain the proportions of theſe is, he obſerves, attended with ſo much difficulty, that he has avoided any inquiry on the ſubject. As a great difference muſt ariſe from the quality of the bark, all thoſe who have endeavoured to determine this matter, have differed extremely in their accounts. He is inclined to believe, that the bitterneſs and aſtringency of the bark both reſide in its reſin, or are very nearly connected with it; and that the mucilage or gummy part is of a ſimilar nature with that of gum Arabic, and many other vegetable mucilages; but ſo intimately combined with the reſinous part, that

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that it is difficult to feparate them from each other.

After thefe experiments on the quilled bark, Dr Skeete next makes a fhort comparifon between it and the flat pieces of bark. From different trials, he is difpofed to conclude, that the preference given by many to the former is without foundation; and that the flat pieces, if they be firm and compact, of a reddifh colour, and fufficiently bitter and aftringent to the tafte, are as good as the quilled bark, and on many occafions preferable to it. But he concludes with obferving, that this article differs fo much in its appearance at different times, that an attention to the degree of bitternefs and aftringency difcoverable by the tafte fhould never be neglected.

The fecond fection of this work contains an inquiry into the nature and properties of the red bark, and a comparifon between it and the quilled bark. From a confiderable number of experiments, of which we cannot here pretend to give any detail, Dr Skeete thinks he may draw the following conclufions:

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1*ſt*, That the red bark reſembles the quilled in its ſenſible properties, both poſſeſſing bitterneſs and aſtringency; but that theſe qualities are to be found in a more remarkable degree in the former than in the latter.

2*d*, That by chemical trials, the red and quilled barks appear in many reſpects ſimilar, moſt of the ſubſtances which act on the one likewiſe acting on the other; with this difference, that the red bark imparts a greater proportion of active and reſinous parts.

3*d*, That as magneſia does not produce the ſame remarkable effect on red as on common bark, there muſt be ſome difference in the real nature of the conſtituent parts, ariſing probably from the previous union of ſome unknown body with the reſin of the red bark; by which it is rendered extremely active and ſoluble, and the deſired action of magneſia upon it thoroughly excluded, in conſequence of a ſuperiority of attraction.

4*th*, That the preparations of the red bark are of a more antiſeptic, or leſs fermentable nature, than thoſe of the common or quilled bark.

He gives the following table, as exhibiting

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ing the comparative action of different substances which were added to the quilled and Peruvian bark:

	Quilled Bark.	Red Bark.
Rectified spirit of wine,	Gr. 14	Gr. 18
Caustic spirit of sal ammoniac,	9	12
Brandy, - -	7	10
Dulcified spirit of sal ammoniac, - -	6	8
Rum, - -	6	10
Infusion with magnesia,	5½	*No additional effect.*
Water in decoction, -	5½	7
Lime-water, - -	4½	5
Proof-spirit, - -	4	6
Port-wine, - -	4	5
Water in the triturated cold infusion, - -	3½	5½
Vitriolic æther, - -	2	3

The sensible effects of the red bark, when it produces any sensible operation, are, upon the whole, very much similar to those of the quilled, only that the red produces all of them in a greater degree: and with respect to its use in diseases, Dr Skeete brings the te-

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ſtimony of ſeveral eminent practitioners in ſupport of its ſuperior efficacy.

From ſeveral different conſiderations, Dr Skeete is led to conclude, that the red bark is obtained from a tree which may be conſidered as a variety of the true cinchona officinalis of Linnæus, probably depending on age, variety of ſoil, expoſure, and other circumſtances; and that it is the moſt efficacious form of it, but not a different ſpecies. He obſerves, that the ſmall and even quilled pieces of red bark frequently met with, have long ſince induced Dr Saunders to relinquiſh the opinion which he at firſt adopted, that the difference depended on the red bark being taken from the trunk, and the quilled bark from the branches of the ſame tree.

In the third ſection of this part, the author offers ſome general obſervations on the bark. He firſt treats of its modus operandi. He conſiders its action as ſolely exerted upon the ſtomach; and thinks that it is with greateſt propriety referred to the head of remedia roborantia. He then makes ſome obſervations on the different methods of exhibiting it, with the different additions which are made to it.

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Theſe he thinks may, with propriety, be referred to four heads or diviſions; *1ſt*, Thoſe which are added with a view of rendering the bark more ſoluble in certain menſtrua; *2d*, Thoſe which are employed to obviate any inconvenient effects ariſing from it; *3d*, Thoſe which are uſed with a view of rendering it more agreeable to the ſtomach; and, *laſtly*, Thoſe which more eſpecially improve its powers as a medicine, or diverſify its mode of action, ſo as to adapt it to particular diſeaſes. The additions of which he chiefly treats are lime-water and magneſia: thoſe, particularly the latter, he conſiders as furniſhing a medicine of peculiar efficacy. And beſides employing magneſia in infuſion with bark, he propoſes that they ſhould be given together in ſubſtance more frequently than has hitherto been the practice. He thinks there is good ground for expecting that the bark would be rendered more efficacious by ſuch a mode of exhibition. He concludes this part with ſome remarks on the pharmaceutical treatment of the bark; and after giving many judicious directions for preparing the extract, he obſerves, that what is called the

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essential salt of bark, prepared and sold by Mr Godfrey in Southampton-street, may be considered as a very delicate extract, entirely free from empyreuma. All the different tinctures of bark should, he thinks, be made either with rectified spirit of wine or with brandy.

In the second part of this work, Dr Skeete treats of the diseases in which bark is more particularly required. And here he presents us with many judicious and useful observations on its use in fevers, putrid sore throat, rheumatism, hæmorrhagies, dropsies, and a variety of other diseases. But as these in general cannot be considered as new, and as a particular detail of them would extend our analysis to an improper length, we shall conclude with giving some account of his observations on the cinchona carribæa, of which he treats in a short appendix.

While he considers all the varieties of bark formerly mentioned as being the cinchona officinalis panicula brachiata, he considers the cinchona pedunculis unifloris as comprehending every plant of the nature of cinchona produced throughout the West Indies, although the species may admit of great variety. For several

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ſeveral years, he obſerves, we were acquainted only with the bark of the iſland of Jamaica, accurately deſcribed by Dr Wright in the Philoſophical Tranſactions for the year 1777. Dr Skeete tells us, that in the ſpecimens of this bark which he has had an opportunity of examining, he has only been able to perceive an extremely bitter, ſweetiſh, and nauſeous taſte, reſiding more particularly in the internal lamina, the external layer or covering being nearly inſipid. When reduced to powder, it reſembled in colour and appearance the common Peruvian bark; and it freely yielded its properties both to cold and boiling water. The colour of the infuſion, however, was much deeper than that of the quilled bark, and extremely bitter; but both from the taſte and from the addition of a chalybeate ſolution, it appeared to poſſeſs but little aſtringency. He thinks it, however, a remedy of great efficacy; and in ſituations where neither the red nor common Peruvian bark can be had of genuine quality or in ſufficient quantity, he thinks that if the Jamaica bark can be procured, it promiſes to be the moſt effectual ſubſtitute we can employ.

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He next deſcribes the St Lucia bark, pointing out the circumſtances in which it chiefly differs from that of Jamaica. The colour of ſome of it which Dr Skeete reduced to powder was of a lighter red than that of the red bark. But the colour, he obſerves, varies conſiderably in different parcels, being remarkably influenced by the age of the trees, the ſoil, and other cauſes. Some pieces of it are flat, thick, and reddiſh; others thin, pale, and rolled up in quills. It poſſeſſes, he obſerves, an emetic quality not common to the true bark; it breaks more woody and ſplintery, and is far more nauſeous to the taſte, the extract reſembling more the bitter of gentian than of Peruvian bark. It agrees in many reſpects with the Jamaica bark, particularly in being diſagreeably bitter, and in having a ſweetiſh diſagreeable taſte; but its emetic property, which the Jamaica bark does not poſſeſs, eſtabliſhes a ſtriking difference.

While the bitterneſs of the St Lucia bark is of a different kind from that of the officinal Peruvian bark, Dr Skeete was not able to diſcover its aſtringency by the taſte; and in precipitation with chalybeate ſolutions, the marks

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of aſtringency were but inconſiderable, when compared with thoſe exhibited by the red bark. The colour, as well as the bitterneſs, of the St Lucia bark, is readily yielded to warm water; for a pint of boiling water poured upon an ounce of the powder, becomes inſtantly of a deep brown or reddiſh colour, and is, if poſſible, ſtill more bitter than the cold infuſion.

On the authority of Mr Wilſon of London, Dr Skeete mentions another curious circumſtance reſpecting the chemical nature of this bark; its containing, viz. a conſiderable proportion of a deep green oil, very acrid and bitter to the taſte, which is to be obtained by preſſure from a ſpirituous extract of it. This oil Mr Wilſon found to be very active, a ſingle drop having occaſioned a tedious aud intolerable ſickneſs. And from different conſiderations he is led to conclude, that the emetic quality of the St Lucia bark is reſident in this green oil; and that if it could be entirely ſeparated, the pure reſin would almoſt, if not altogether, loſe that effect.

Dr Skeete and Mr Babington made ſome attempts to obtain this oil from a few ounces of

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of the ſpirituous tincture of St Lucia bark evaporated to a pilular conſiſtence, but without effect. And they found that the St Lucia bark in diſtillation with water yielded nothing of an oily nature. Dr Skeete therefore thinks, that if the green oil mentioned above, does really exiſt in this kind of bark, and be not produced in conſequence of any decompoſition or alteration in the reſin by too great a degree of heat, it will form a remarkable exception to vegetables in general; for he believes there is ſcarcely an inſtance of an oil being thus procured, moſt of the eſſential oils being ſeparated in diſtillation with water.

Of this green oil Dr Skeete received a ſmall quantity from Mr Wilſon; and he found it poſſeſſed of very curious properties. It was perfectly inflammable, lighter than water, and had not the ſmalleſt tendency to unite with it. In rectified ſpirit it was inſtantly and completely diſſolved, and imparted to it a greeniſh colour. A few drops of it expoſed to heat in a tea-ſpoon diſcharged an offenſive ſmoke or vapour, till at length a ſmall portion of a fixed blackiſh ſubſtance remain-

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ed behind, not completely ſoluble in ſpirit, and requiring the aſſiſtance of heat before any ſolution at all appeared to take place. The ſmell was remarkably empyreumatic, and the taſte of the ſame kind, joined to a moſt diſagreeable bitter.

With reſpect to the medical properties of this bark, Dr Skeete ſpeaks only on the authority of others. He obſerves, that when firſt tried in the iſland from which it receives its name, by Dr Young and Mr Davidſon, its ſtrong emetic and purgative qualities prevented its exhibition: but that the beſt ſucceſs had been afterwards experienced from ſome of it, which had been kept a long time, and was ſufficiently dried. It was employed chiefly under the form of infuſion with lime-water or ſimple water, in the proportion of an ounce to three pints. It was given in ſubſtance from twenty to thirty grains for a doſe; but never exceeding the latter quantity, as it was found that the ſtomach would ſeldom retain more than twenty grains. But he obſerves, that in different trials of this bark which he is informed have been made in Britain, it has not done ſo much as was expected

pected from the account given of its having cured intermittents at St Lucia, after the common Peruvian bark had failed. Dr Skeete concludes this treatife with recommending the red bark as in many refpects preferable to any other kind yet employed in practice: And in this opinion, as far as our own experience goes, we are readily difpofed to join him. At one time the fcarcity of this bark led in feveral inftances to the moft flagrant abufes, other kinds of bark being fubftituted in its place, and made to refemble it by different colouring materials. The high price of it alfo was at one time much againft its ufe. But it is to be hoped, from the late importations which have taken place, and from the additional quantities which may foon be expected, that the fhops will foon be abundantly fupplied with it on reafonable terms. And while the treatife before us has no inconfiderable fhare of merit, as having thrown much light on its natural, chemical, and pharmaceutical hiftory, it alfo furnifhes additional evidence of its efficacy, and contains many ufeful obfervations on its employment in different difeafes.

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XV.

Experiments on the Red and Quilled Peruvian Bark; with Observations on its History, Mode of Operation, and Uses; and on some other Subjects connected with the Phænomena and Doctrines of Vegetable Astringents: Being a Dissertation which gained the first Prize given by the Harveian Society of Edinburgh for the Year 1783. *By* Ralph Irving, *M. D.* 8vo, Edinburgh.

THIS ingenious experimental essay, as well as that of which we have last given an analysis, owes its origin to the question respecting the Peruvian bark, proposed by the Harveian Society of Edinburgh: And it was rewarded by the highest mark of distinction which they bestow. While the former treatise has, before its publication, been augmented and improved by many additional experiments and observations, this is present-

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ed to the public nearly in the ſtate in which it was firſt ſubjected to the examination of the ſociety.

In an introduction to his experiments, Dr Irving preſents us with ſeveral obſervations on the natural hiſtory of the Peruvian bark; on the names by which it was known among the natives of America; and on the period of its diſcovery to the Europeans. He does not pretend to determine whether the red bark be the product of the ſame ſpecies of tree with that which produces the quill bark; but he differs from Dr Saunders, who has lately turned the attention of medical practitioners to the former of theſe articles, and who ſuppoſes that the red bark was that uſed in the days of Sydenham and Morton. He obſerves, that no very accurate deſcription of the bark is to be met with in the works of Sydenham; but he thinks nothing more clear than that Morton uſed and preferred the thin quilled bark: and he contends, that the ſucceſs aſcribed to this remedy by theſe authors is not more remarkable than we ourſelves daily experience from the employment of the quill bark in common uſe. He concludes his

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his introduction by pointing out the marks of good and genuine bark, which he thinks are most distinctly obvious in the red bark of Dr Saunders. And he thinks the goodness of every other kind may be estimated as it approaches more or less to the appearance of the red bark.

The three first experiments which Dr Irving relates, serve to prove, that the middle layer of the bark crumbles down first in the operation of pounding, and that the powder which passes through the sieve first is the strongest. In the fourth experiment, six ounces of the powder of quill bark were macerated in a gallon of soft water. After this a quart of distilled water was drawn off from it by a brisk heat. The water had sensibly the smell, but a very faint taste, of the bark. On its surface was a thin pellicle, which, when examined by a microscope, was found to contain minute globules of a spangling hue inviscated in a peculiar substance. These spangling particles Dr Irving thinks were undoubtedly essential oil. This essential oil, however, it appears, either exists in very small quantity in the bark, or is so intimately com-

bined with the other principles, that it is difficultly detached. The distilled water ftruck no black colour with a folution of martial vitriol. From this experiment it appears that the bark muft lofe much of its aroma by boiling, and that the principle of aftringency in this fubftance is in a pretty fixed ftate.

The feven following experiments exhibit the effect of alkalis both fixed and volatile, and of lime-water when added to a decoction of bark. Upon thefe additions being made, a depofition more or lefs copious took place; from which Dr Irving concludes, that it is improper to join thefe fubftances to decoctions of bark; and that the object propofed by doing fo, of making the medicine more powerful, or of correcting fome of its fuppofed bad qualities, will not be obtained.

The feries of experiments which next follows was inftituted to try ftill farther the effects of lime-water, when added to the infufion and decoction of bark. From thefe experiments he infers, that lime-water is a very improper menftruum for the bark; that boiling effects that change in bark which is always the more perfect confequence of age; and

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and that the decoction contains conſiderably leſs fixed air than the infuſion, but in a more looſe and detached ſtate. It appeared that lime-water in a ſmall quantity is able to precipitate the gummy parts of the bark; yet when applied in ſuch a manner that a repetition of its force ſhall compenſate for its weakneſs, it is even capable of diſſolving the ſame matter it before depoſited.

Lime-water, at leaſt in the way Dr Irving employed it, had no obvious effect on the reſinous depoſite from decoctions and infuſions of bark. After it had precipitated the gummy matter from the old decoction, the clear liquor imparted a ſenſible roughneſs on the tongue. From theſe facts he infers, contrary to the aſſertion of Dr Lewis, that the decoction of bark does really contain reſin, and that water is capable of ſuſpending this reſinous matter leſs dependent on the intervention of the gum than has been ſuppoſed. In proſecuting this inquiry farther, he found that, a mixture of lime-water with a decoction or infuſion of bark, upon ſtanding for ſome time, loſes all taſte of lime-water. This he found to be the caſe ſooner with the decoction than

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the infuſion; and the infuſion rendered a greater quantity of lime-water inſipid than the decoction did. From this he infers, that the infuſion contains more fixed air than the decoction; that it is leſs periſhable; and that the active principles of the bark are extract-ed in a more undecompoſed ſtate by infuſion in cold water than in boiling water.

Decoctions and infuſions of the red bark were ſubjected to ſimilar trials with lime-wa-ter. From the reſult, it appeared that they were leſs periſhable than thoſe of the pale; that they furniſh not only a greater quantity of fixed air, but alſo a more copious depoſi-tion of the extractive matter of the bark. From theſe experiments, Dr Irving conjec-tures that lime-water may be employed as a teſt of the ſtrength and goodneſs of decoctions and infuſions of bark.

The addition of a ſolution of martial vi-triol to the decoction and infuſion of bark al-ſo proves a teſt of the goodneſs of theſe pre-parations. When they are newly made, a purple colour is ſlowly produced in them, particularly in the infuſion; but upon ſtand-ing it becomes darker. When the chaly-

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beate was added to an infuſion of four days old, the purple colour was produced much more ſuddenly; but it did not become darker upon ſtanding. The decoction of the ſame age inſtantly ſtruck with the chalybeate a greeniſh colour. An infuſion of eight days old gave a beautiful green colour with the chalybeate. The decoction alſo gave a green colour, but conſiderably lighter. The infuſion and decoction of the red bark gave a darker colour with the chalybeate than thoſe of the pale; and both of them were older before they gave the green colour.

From theſe experiments, Dr Irving concludes, that the preparations of the red bark are not only ſtronger than thoſe of the pale bark, but are alſo much leſs periſhable. For the more ſuddenly any preparation of bark ſtrikes a colour with chalybeates, we may, he thinks, be thereby aſſured that the preparation is more in a fermenting ſtate. If the colour be purple, the fermentation has not yet advanced far; if it be of a dark green, the fermentation has advanced a little farther; and if again the green be of a lighter hue, it is ſtill farther advanced. But if no

colour be produced, which by the by Dr Irving never knew to take place, he would suppose that a total evolution of the gas producing the colour had already taken place.

In some subsequent experiments, Dr Irving follows the steps of Dr Percival. He found that decoctions made from the residua of former decoctions and infusions were of equal strength, though he suspects that the original decoction was not so strong as the infusion. He infers, that in both residua as much resin remained as boiling water was able to suspend. In proof of this, he found that an infusion of the residuum of the decection was stronger than a decoction of the same residuum; and that an infusion of the residuum of the first infusion was stronger than a decoction of the same residuum. This he accounts for from supposing that boiling is able to destroy the astringency of the bark entirely, and that it always impairs it more or less. Hence he concludes, that the cold infusion of bark is in many respects preferable to the decoction. He infers, that the practice of throwing away the residua of infusions and decoctions is profusion; as they may be applied

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applied to very uſeful purpoſes, more eſpecially in the making of tinctures.

He found that the triturated infuſion of the bark always let fall a quantity of ſediment. The ſuſpenſion of the bark, therefore, in this way, is not complete. But even after this depoſition, the infuſion is ſtronger than when made without triture, particularly in the bitter and aſtringent parts. The aromatic part ſeems to ſuffer in this preparation; for during the triture a ſtrong ſmell of bark is diffuſed in the circumambient air. Dr Percival thinks that a decoction of the reſiduum of a triturated infuſion is ſenſibly weaker than a decoction of the reſiduum of the plain infuſion. But our author is not of this opinion. The reſult of other experiments led him to conclude, that triture ſuſpends the bark in water much in the form of emulſion; that the reſin is diſſolved in an infuſion of bark; and that boiling renders the ſame reſin incapable of farther ſolution.

After twenty-two ſeparate infuſions of an ounce of bark in water, each infuſion ſtanding twelve hours, excepting the firſt, which was allowed to ſtand for three days, the laſt infuſion

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infuſion afforded the water clear and taſteleſs. The reſiduum was of conſiderably leſs bulk than the original powder, and was gritty and filamentous to the look and feel. Two drachms of it were infuſed in an ounce of rectified ſpirit; which after forty-eight hours acquired a pale colour, and its taſte was conſiderably bitter, but without ſenſible aſtringency. The remaining reſiduum was boiled in twelve ounces of water; a very ſlight yellowiſh colour was perceived, and after ſtraining, it let fall a ſmall quantity of a blackiſh powder; the liquor then became clear and taſteleſs. This powder had much the appearance of reſin, but did not impart any ſenſible roughneſs to the tongue.

It may, he obſerves, appear extraordinary, that twenty-two effuſions of water ſhould have exhauſted the ſtrength of his bark, when it required thirty ſuch, and theſe continued for three days each, to exhauſt that employed by Dr Percival. He is led to think that this may have in part ariſen from Dr Percival's bark having been ſtronger than the pale bark which he employed, and in part from the length of time for which each infuſion

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was continued. For Dr Irving imagines that the water, after a certain time, depofites again part of the bark which it had previoufly diffolved. Hence the impropriety of allowing bark to ftand long in infufion. This experiment, he thinks, renders it probable that refin is foluble in water without the intervention of gum. But he imagines that boiling water does not fufpend refin as a folvent; but effects what may be called a temporary fufion of it. And he thinks that the experiment of the fpirituous infufion proves, that all the ufeful parts of bark are not to be extracted by water alone.

Dr Irving next proceeded to try the effects of repeated coctions. The refiduum of a decoction was boiled repeatedly in frefh parcels of water. After thirteen coctions the liquor came off clear and taftelefs. The tincture made from this refiduum was confiderably weaker than that made from the refiduum after repeated infufion. From this he infers, that repeated coctions are capable of melting out part, or perhaps the whole, of the refin of the bark; and that long boiling may entirely decompofe the principles, and more efpecially the

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the refinous part of the bark. To prove this, he added two ounces of lime-water to four ounces of a decoction of bark, formed by long continued boiling; which had a faint bitter tafte, accompanied with a kind of difagreeable harfhnefs, and from which a black and taftelefs depofite had been made. A flight turbefcence took place with fome little precipitation. But the mixture, after being kept for ten days, ftill retained the tafte of lime-water. To two drachms of the refiduum of this decoction an ounce of rectified fpirit of wine was added. The infufion gained fome little colour without any fenfible tafte. From thefe experiments, he thinks we may infer, that the watery extract of bark does not contain thofe principles that are foluble in water in their natural ftate and integrity.

The affufion of rectified fpirit on bark was repeated fix times at the interval of forty-eight hours. The refiduum communicated to cold water a confiderable aftringency. From this Dr Irving concludes, that the properties of bark are not to be extracted by water or rectified fpirit feparately employed; but that a combination

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combination of the two is the moſt complete menſtruum of this ſubſtance.

The experiments which next follow were made to determine the powers of different ſolvents of the bark, and the relative degree of ſolubility of the pale and of the red bark. So far as the compariſon is made, it appears that the red bark is more ſoluble, and of courſe that the infuſions of it are ſtronger than thoſe of the pale bark. Dr Irving obſerves, that the addition of tincture of bark to infuſions already made, is bad pharmacy. He thinks it much better to add the ſpirit to the water on the commencement of the infuſion; and when an aromatic is to be added, it will be beſt done by joining a ſpirituous or ſimple aromatic water with the menſtruum.

The ſolubility of the reſin of bark in different menſtrua was our author's next object of attention: He put equal quantities of it into the following liquors, and found their ſolvent powers to ſtand in the order of the liſt ſubjoined.

Dulcified ſpirit of ſal ammoniac.
Cauſtic volatile alkali.

Cauſtic

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Cauftic fixed alkali.
Dulcified fpirit of vitriol.
Dulcified fpirit of nitre.
Rectified fpirit of wine.
Proof fpirit.
Water.
Lime-water.

He does not, however, conclude, that thofe higheft in the lift are the beft menftrua for entire bark: but he thinks that the dulcified fpirit of vitriol, in the proportion of one part to fix parts of water, is an excellent affiftant in preparing the cold infufion of bark.

To afcertain the effect of the refinous depofite of the bark on the living body, a tea fpoonful of that matter obtained from the caput mortuum of a fecond diftillation was given to a man who had been taking bark for three days before. In about two hours after it was taken, it produced gripes and feveral loofe ftools. From this it appears that the purgative quality of the bark is feated in the refin.

Dr Percival has fuppofed a particular affinity to fubfift between acids, aftringents, and bitters, and that they mutually neutralize

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each other. Dr Irving, from his experiments, is inclined to controvert this concluſion; but while he gives it as his opinion that Dr Percival's experiments do not prove ſuch an union, he admits that his own experiments do not fully prove the contrary. He agrees in opinion with Dr Percival, when he contends, that acids and bitters combined poſſeſs double the ſum of the antiſeptic powers which they have when ſeparately employed. And his trials on this ſubject not only confirm Dr Percival's opinion, but alſo prove the ſuperior antiſeptic power of the red bark. But in oppoſition to Dr Percival's experiments, he found that watery preparations of bark tend more or leſs to preſerve ox-gall, and that they are incapable of coagulating it.

In conducting theſe experiments, an analogy between the effects of a fermenting infuſion and thoſe of yeſt, ſtruck the author, and led him to think, that an artificial yeſt might be diſcovered. He made ſome experiments towards an inquiry of this kind, but without effect. What he found to reſemble yeſt moſt nearly was, an infuſion of the heads of white popies, mixed with the yolk

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of an egg, and the whole ſlowly impregnated with fixed air.

To determine the aſtringent power of bark, Dr Irving inſtituted ſome experiments with human hair; and after many difficulties and diſappointments, he contrived an inſtrument, of which he gives a deſcription and ſketch, and which ſeems to be ingeniouſly fitted for aſcertaining the degree of contraction which took place. From thoſe experiments he found, that the aſtringent power of an infuſion of bark, with a proportion of vitriolic acid, was greater than that of the ſimple infuſion; and that the aſtringency of this laſt was greater than that of the acid diluted with water. He next endeavoured to determine by experiments the effects of a mixture of bark and vinegar on dead animal matters. Though he could not here arrive at great accuracy, yet he thinks it is rendered at leaſt probable, that the aſtringency of the bark is not diminiſhed by vinegar, further than an admixture of that acid is a counterpoiſe to the conſtringing powers of the bark. And as it appears that vinegar precipitates the matter of the

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bark, it is not, he thinks, probable, that the two form any neutral union.

As Dr Irving had repeatedly obſerved that infuſions and decoctions of bark produced more or leſs of a dark colour with chalybeates, in proportion to the age and ſtate of thoſe preparations, this naturally turned his attention to the production of ink; and the remaining experiments relate to that ſubject. A pretty deep-coloured ink was made with an infuſion of red bark and a chalybeate. The clear colour was regenerated by means of vitriolic acid; but when the acid was afterwards ſuperſaturated by the oleum tartari per deliquium, the colour became conſiderably blacker than that of the original ink. The reſult was the ſame when common magneſia and plain chalk were uſed in place of the oleum tartar. When the acid was ſaturated with fixed cauſtic alkali, with calcined magneſia, and with chalk in a ſtate of quick lime, the reproduced colour was faintter than that of the original ink. From this Dr Irving infers, that fixed air is an eſſential conſtituent in the production of ink; but he ſuppoſes that this air is only neceſſary as it is

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ſubſervient to the depoſition of phlogiſtic matter in a particular ſtate and form.

After relating his experiments, Dr Irving ſubjoins ſome thoughts on the mode of operation of the Peruvian bark. Here he preſents us with a conciſe view of the different opinions entertained by the moſt eminent phyſicians reſpecting the operation of bark, from the days of Dr Sydenham to the preſent time. On this ſubject he is inclined to adopt the opinion of thoſe who ſuppoſe that the effects of the Peruvian bark do not ariſe from its operating on the fluids, and that they muſt therefore depend on its operating on the nerves of the ſtomach, its effects being thereby communicated to the reſt of the nervous ſyſtem; and that its operation depends upon a tonic power. He thinks it even obvious, that its antiſeptic power is an effect of its tonic power only. In this opinion we muſt own that we cannot altogether adopt his ſentiments. For although when employed as a remedy in caſes of diſeaſe, it may with ſufficient propriety be arranged among the antiſeptica tonica, as exerting on the living body both an antiſeptic and tonic power; yet the

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the effect which it unquestionably has, of resisting putrefaction in dead animal matters, even in fluids, can never surely be attributed to its tonic power: and it is but reasonable to suppose that its action, as an antiseptic in the living body, is at least, in some degree, on the same principles on which it resists putrefaction in animal matters when in a dead state.

This treatise is concluded with some observations on the use of bark in particular diseases; but as most of these, though judicious and important, are selected from other authors, we reckon it less necessary to lengthen out this analysis, by giving any account of them. And, indeed, it is but proper to observe, that as the nature of an experimental inquiry makes it very difficult to give a concise, and at the same time an accurate analysis of what it contains, we have found it necessary, without giving a detail of the experiments, merely to state the conclusions he draws from them. This we are satisfied must, on many occasions, be unsatisfactory, particularly to those not acquainted with the experiments formerly made respecting the bark.

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But as a more accurate and minute detail would neceſſarily have exceeded due bounds, we muſt refer to the original work ſuch of our readers as wiſh for fuller information on many curious and intereſting particulars, which have ſuggeſted themſelves to our ingenious author in the courſe of this inquiry, and of which he has treated with uncommon ability.

XVI.

XVI.

Experiments and Obſervations on a New Species of Bark, ſhowing its great Efficacy in very ſmall Doſes; alſo a Comparative View of the Powers of the Red and Quilled Bark; being an Attempt towards a General Analyſis and Compendious Hiſtory of the Valuable Genus of Cinchona or the Peruvian Bark. By Richard Kentiſh, *M. D. Member of the Royal Medical Society of Edinburgh, Correſpondent Member of the Society of Scottiſh Antiquaries, &c.* 8vo, London.

IN the two preceding articles, we have given an analyſis of experimental eſſays, which have brought to light ſeveral curious and intereſting particulars reſpecting the Peruvian bark: But notwithſtanding what has been done, the ſubject cannot yet be conſidered as by any means exhauſted; and in

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the treatiſe now before us, the ingenious author has brought to light many particulars well deſerving attention; eſpecially with reſpect to that new ſpecies of bark commonly known by the title of Cinchona Sanctae Luciae, and lately introduced into practice.

After a ſhort general hiſtory of the Peruvian bark, and ſome obſervations on its botanical arrangement, Dr Kentiſh, in his ſecond chapter, gives a particular detail of twenty-four experiments which he performed with the cinchona officinalis. From theſe experiments, he concludes, that this article is a powerful aſtringent; that its aſtringency reſides in a gum which is ſoluble in water, and more readily by cold maceration than coction; that it contains a bitter principle, which is a reſin; that the aſtringent gum and bitter reſin are ſo combined, that by the aſſiſtance of the former, part of the latter is ſuſpended in water even by cold maceration; that coction extracts powerfully the reſin, although it evaporates or diminiſhes the aſtringent principle; that proof-ſpirit diſſolves both the aſtringent and bitter principles, and is the only proper menſtruum of the latter; that vinous

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vinous ſpirit has the ſame effect as proof ſpirit, although in a leſs degree; that concentrated mineral acids entirely corrode or diſſolve the bark; but that the weaker have little effect on its ſubſtance, and when added to its ſolutions in water or ſpirit, precipitate its active parts; that common alkalies prevent its ſolution in other menſtrua; that volatile alkali does not extract its virtues, while the cauſtic volatile alkali forms but a weak preparation; and, laſtly, that it is a powerful antiſeptic.

In the ſecond ſection, Dr Kentiſh treats of the cortex ruber, or red Peruvian bark. He introduces his remarks by ſome obſervations on the hiſtory of this bark, and on its recommendation to the attention of practitioners by Dr Saunders of Guy's Hoſpital; and he is inclined to adopt the opinion of thoſe who conſider it as being a different ſpecies of the cinchona from that which yields the pale quilled bark. He next relates twenty-four experiments which he performed with this article. From theſe he concludes, that there is a very great analogy between the two, both of them being aſtringent, bitter, and antiſeptic; but, upon compariſon, it appeared

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that the pale bark manifested greater signs of astringency, and yielded more watery or gummy extract; whilst the red species abounded more in resin, and yielded a more copious spirituous extract. The exact quantity which each species yields per pound, must, he observes, vary according to the quality of different parcels: But in that which he examined, he found that four pounds of red bark yielded twelve ounces of spirituous extract, while the same quantity of quilled bark yielded only eight ounces. He found that a pound of quilled bark yielded five ounces, and near three drams of watery extract; while the same quantity of red bark yielded only five ounces and half a dram. From these conclusions he draws some practical inferences respecting the medical effects of the red bark. He allows, that in some instances it may be preferable to the quilled, although not as Dr Saunders supposes, from its superior astringency; but rather on account of its bitterness. In what cases this may give it the preference, is not, he thinks, easy to determine. There are agues, he observes, which astringents alone, as alum, effectually

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fectually cure; there are others, in which bitters alone, as camomile flowers, absinthium, or gentian, are the sole remedies; in others again, and these most frequent, the conjunction of these principles is necessary. From this then he infers, that *à priori*, at least the universal superiority of the red bark is not to be admitted. And in support of this deduction, he mentions the authority of several respectable practitioners, who have found it to fail where the pale bark succeeded.

In the succeeding section Dr Kentish treats of another species of bark; that which has been known by the names of the Cinchona Sanctae Luciae, Quinquina Piton, Quinquina de la Martinique, Carribean, or New Bark. After some remarks on the history of this bark, and on its botanical description and character, he relates twenty-four experiments which were made with it also. From these he concludes, that it is a most powerful astringent; that it is an excessive bitter; and that it is antiseptic. On comparison, he found its astringency and bitterness greatly superior to the other species of the bark; and as these

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are the only active principles to be detected in the cinchona, he thinks we may conclude this species to be possessed of the virtues of the other in a concentrated form. As an antiseptic, however, he considers this bark as inferior to the common bark, although superior to the red kind.

Having from experiment acquired some knowledge of the constituent parts of this new species of bark, he next proceeds to treat of its effects in medicine. Taking it for granted that the St Lucia bark is the same with that described by M. Mallet of the Faculty of Medicine at Paris, he gives an account of the successful employment of it by this practitioner in the French West India islands. The result of Mr Mallet's experience was, that this species of the quinquina, taken in decoction prepared by two drams to an English pint of water, and in the dose of one dram, or even half a dram, in the form of bolus, is emetic and cathartic; that it cures recent intermittents, and suspends those which have for a long time resisted the action of common Peruvian bark; that its action is very quick; and, lastly, that the property

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property which it poſſeſſes of vomiting and purging, is an advantage which ought to give it the preference to the common bark, ſince it unites the faculty of evacuating the ſick and producing a cure of the fever. Dr Kentiſh next obſerves, that in ſome of the London hoſpitals, this ſpecies of bark was found to cure intermittents and obſtinate complaints in doſes of a ſcruple. But as even that doſe often proved emetic, the medicine was frequently laid aſide too ſoon.

After giving this account of the practice of others, Dr Kentiſh next preſents us with the reſult of his own experience. He has had an opportunity of making ſeveral fair trials with it; and he was at firſt, like other practitioners, under ſome embarraſſment, occaſioned by its proving emetic in ſmaller doſes than he expected. But he now finds, that doſes of five, eight, or ten grains, repeated at ſhort intervals, produce all the good effects of the largeſt doſe of common or red bark. He has found that a few grains of canella alba make it ſit eaſily on the ſtomach, in the form of powder or bolus: and when it is to be uſed under the form of infuſion, he tells us

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that one dram, or in ſome caſes half that quantity, infuſed for twelve hours in a pint of water, is ſufficiently ſtrong. A draught compoſed of one ounce of this cold infuſion with two drams of the ſpirituous tincture, and a few drops of the tinctura thebaica, produces the beſt effects.

In three quartans which had withſtood the uſe of the common and red bark for three months, eight grains of this medicine, conjoined with five grains of canella alba, taken three times a-day, beginning immediately after a fit, and repeating the doſe every two hours on the morning of the day on which the fit was expected, entirely prevented it. In four caſes of tertians, which had continued for ſeveral weeks, and two of which had reſiſted bark, bitters, and alum, in large doſes, the cinchona Sanctæ Luciæ produced ſpeedy cures. But the moſt ſurpriſing inſtance of its ſucceſs which Dr Kentiſh met with was in a caſe of dyſpepſia or diſorder of the ſtomach. The ſymptoms of the diſeaſe were complicated; and with a great variety of ſtomach ailments the patient was ſuppoſed to labour under a diſeaſed liver. After trying many medicines

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dicines without effect, his caſe was thought incurable. In this ſituation he was ordered a ſlight infuſion of the St Lucia bark; of which he took an ounce, with two drachms of the ſpirituous tincture, twice a-day. Under this medicine his diſeaſe ſoon took a favourable turn; and in the courſe of ten days he recovered his appetite and ſtrength to the great ſurpriſe of his friends. And by the aſſiſtance of gentle exerciſe and proper diet, he was ſo well recovered in three weeks as to be able to undertake a journey to a conſiderable diſtance. From theſe and ſeveral other caſes, ſome of which Dr Kentiſh has related at full length, he is led to entertain the moſt favourable opinion of its efficacy in ſmall doſes. If the experience of others ſhall fully confirm Dr Kentiſh's obſervations, the St Lucia bark will conſtitute a moſt important article of the materia medica: And from many different conſiderations, it well deſerves attention. For our part, we muſt acknowledge, that we have not had an opportunity of making many trials of this article. But in ſome caſes, we have had an opportunity of uſing both the cinchona Jamaicenſis deſcribed by Dr

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Wright, and likewiſe that bark brought from St Lucia. From theſe trials we were led to conclude, that as an eaſy and effectual remedy for intermittents, it is inferior not only to the red but even to the pale Peruvian bark. It is, however, not impoſſible that other parcels of it may be more efficacious. And we ſhall be ſincerely happy to ſpeak more favourably of it from future experience.

In the fourth and laſt ſection of this work, Dr Kentiſh preſents us with ſome general obſervations on the bark. After ſome remarks on its preparations, particularly thoſe introduced into the pharmacopœias of the London and Edinburgh colleges, he next offers his opinion reſpecting its mode of action. His opinion is, that the good effects derived from the bark are entirely to be attributed to its ſtimulating power. Without entering into the arguments by which he ſupports this opinion, we ſhall only obſerve, that to us it ſeems to be totally irreconcileable to an almoſt infinite number of obvious and undeniable facts. How many ſtimuli are there both of the chemical and mechanical kind, which evidently act in ſtimulating animal

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ſyſtems, not only more powerfully but alſo more permanently than the Peruvian bark? But from theſe we would in vain look for thoſe good effects which may be derived from the bark. If the doctrine here contended for were well founded, we might expect to cure every intermittent, and indeed moſt other fevers, by the application of heat alone. But while this theory would lead us to expect a cure, experience aſſures us that it is productive of the worſt effects. And due attention to the influence of heat on the human ſyſtem, is, we apprehend, ſufficient to convince any impartial obſerver, that every ſtimulant is not a tonic.

Dr Kentiſh concludes this treatiſe with ſome general obſervations reſpecting the uſe of bark in particular diſeaſes. There he differs much leſs from other practitioners in the practice he recommends than in the principles on which he attempts to explain it. And whether his opinion reſpecting its mode of action will lead to its being employed with ſucceſs in apoplexy, palſy, and other diſeaſes in which ſtimulants are indicated, but in which phyſicians have not hitherto found

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it productive of any material benefit, is, we muſt own, with us a matter of great doubt. We are even inclined to think, that if practitioners had ſpeculated leſs concerning its mode of action, we might at this hour have been poſſeſſed of a greater number of important facts reſpecting its ſucceſsful employment in diſeaſe. And even of thoſe theories which have led to the advantageous extenſion of its uſe, there are not a few which are now very generally ſuppoſed to be erroneous.

XVII.

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XVII.

Memoire ſur le Scorbut, pour l'uſage des Chirurgiens de l'Armée et de la Flotte Impériale Ruſſe. Traduit de l'Allemand ſur l'Original du Docteur Henri Bacheracht, *Conſeiller de College et premièr Medecin de la Flotte Impériale.* 12mo, Reval.

IN the dedication prefixed to this treatiſe, which is addreſſed to the Empreſs of Ruſſia, we are informed, that about the beginning of the year 1786 the ſcurvy prevailed both at Peterſburgh and Cronſtadt in a very fatal manner, and even in ſuch a degree as to demand the particular attention of government; and that the ſalutary orders which were iſſued in conſequence of this had the effect of ſnatching from death a great number of thoſe unfortunately affected with it, and of reſtoring them to life and to health.

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The happy ſucceſs reſulting from theſe orders determined Dr Bacheracht, phyſician to the fleet, to publiſh this diſſertation on the ſcurvy for the uſe of the ſurgeons of the fleet and army: and to render it more extenſively uſeful, it was very ſoon after tranſlated into French by Mr Louis Deſbout, ſurgeon to the admiralty of the Empreſs of Ruſſia. From this tranſlation we ſhall here preſent our readers with an analyſis of Dr Bacheracht's work.

He ſets out with obſerving, that while the ſcurvy is a diſeaſe depending on obvious cauſes, it is neither in itſelf dangerous nor contagious, nor hereditary. He conſiders it as being preciſely the ſame diſeaſe in all parts of the world, whether at ſea or on ſhore; though the diverſity of its ſymptoms, its different aſpects and complications, have led authors into errors both with reſpect to its diviſion and treatment. The only diviſion of which he thinks it is properly ſuſceptible is, into endemic, epidemic, and ſporadic. The ſituation of the place, the nature of the climate, and the mode of life, produce the firſt of theſe; which is as it were indigenous in certain

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tain ſituations. The epidemic ſcurvy is that which at any particular place and ſeaſon attacks great numbers at once, and which ceaſes only when the circumſtances producing it give riſe to others leſs favourable to the propagation of the diſeaſe. And the ſporadic ſcurvy is that which at all times and in every ſituation attacks one or a few individuals.

In treating of the cauſes of ſcurvy, he repreſents expoſure to humidity as being the principal circumſtance which diſpoſes the body to become ſcorbutic. But by itſelf it will not, he tells, produce ſcurvy, unleſs other ſecondary cauſes concur to give activity to the effects which it produces. What he conſiders as the principal occaſional cauſes, are, a long and cold winter, aliments of a bad quality, exceſſive and long continued fatigue, the want of proper cloathing, ill conſtructed lodgings, and the exceſſive uſe of ſpirituous liquors. Theſe occaſional and prediſponent cauſes produce, he thinks, in the body a certain vitiated diſpoſition, which may be called the ſcorbutic cachexia, and which may equally take place at ſea or on ſhore.

Due attention to the cauſes which have

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been mentioned will, he thinks, sufficiently point out why the ſcurvy reigns more frequently and is more eaſily produced at ſea than on ſhore. And it is there, he obſerves, more malignant; chiefly for the following reaſons: Becauſe it is often impoſſible to procure defence againſt the cold and humidity which often prevail; becauſe the articles of diet cannot be kept for a very long time in a ſound condition; becauſe fatigue enervating the body is often unavoidable; becauſe the neceſſary reſt is often not to be procured; and becauſe the remedies to be employed againſt the diſeaſe are often either altered in their quality or deficient in quantity.

After treating of the cauſes, our author next proceeds to enumerate the diagnoſtic ſymptoms of ſcurvy: and in doing this he gives a very full and accurate hiſtory of the diſeaſe. But the ſymptoms he mentions are merely what have before been often taken notice of by other writers. He repreſents it as a circumſtance worthy of remark, that ſcorbutics, even in the moſt inveterate ſtate of the affection, do not loſe their appetite; which he aſſerts fails only when the nature of

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of the diſeaſe is eſſentially changed by the addition of fever. The greateſt part of ſcorbutics have rather a voracious appetite; and the pulſe either continues natural or is ſlower. He remarks, that as ſoon as any one is attacked with ſcurvy, all the external injuries he had before ſuffered are again felt with their former ſeverity; that the ſlighteſt contuſions, wounds, or ulcers, happening to a ſcorbutic, are converted into ulcers of as bad a nature, and as difficult to cure, as thoſe which ſucceed the exceſſive uſe of mercury; that a ſcorbutic ulcer never affords well-conditioned pus, but only an acrid bloody ſanies; that during the courſe of an epidemic ſcurvy, all the common diſeaſes, as fevers, exanthemata, and dyſentery, are united with the ſcurvy in ſuch a manner as to give a very dangerous complication; that ſometimes the ſtrength of ſcorbutic patients is ſo reduced, that on the leaſt motion fainting enſues; that they are often ſubjected to very conſiderable hæmorrhagies from the noſe, ſtomach, gums, &c.; that the gums often become inſenſible and even fall off in conſiderable portions; that one of the moſt diſtreſſing ſymptoms is the

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the occurrence of falivation, whether happening fpontaneoufly or in confequence of the imprudent ufe of mercury; and that the condition of the weather has a remarkable and fingular influence on fcurvy.

Dr Bacheracht next proceeds to treat of the means of prevention. There are, he obferves, few difeafes which can be more eafily prevented, provided the attempt be made at a fufficiently early period, and profecuted with zeal and prudence. As far as the caufes which tend to induce it can be removed, particular attention muft be beftowed on this fubject. Dry and ferene air, a diet compofed of animal food and frefh vegetables, good and uncorrupted drink, moderate labour, reft during the night proportioned to the work of the day, fufficient defence againft cold, change of cloaths, fpacious and well-aired lodgings, and the moderate and prudent ufe of fpirituous liquors, are, he thinks, the true means of prevention, and will even reftrain the progrefs of this deftructive difeafe when it has diftinctly occurred. Where moifture prevails, the beft way of counteracting it is by lighting fires, and by affording change of apparel. He

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conſiders it as a very dangerous error to ſend patients affected with but a ſlight degree of ſcurvy to a general hoſpital; becauſe there ſcorbutics are very apt to be confounded with other diſeaſes, to be improperly treated, and to catch new diſeaſes much more eſſentially dangerous than the firſt. But of all the means of prevention, good regimen, as referable to the different heads already mentioned, is, he tells us, to be conſidered as by much the moſt powerful; and when this can be obtained, and is ſtrictly obſerved, very few, and theſe very ſimple, remedies are, he aſſerts, neceſſary. A gentle perſpiration, however, is, he thinks, of very great conſequence, and nothing is to be neglected that can induce it; for this purpoſe he recommends the uſe of the vapour bath. To patients when firſt coming under his care, he orders an emetic or purgative, according to the indications which preſent themſelves. As a purgative, he adviſes a mixture of rhubarb with cream of tartar; and as an emetic, a mixture of rhubarb with ipecacuanha. For promoting a gentle diaphoreſis during the night, he directs that the patients ſhould take at bed-time

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a beer-glaſs full of a liquor prepared by boiling in a pound of water three drams of muſtard and an ounce of honey. This remedy, although ſimple, procures, he tells us, a gentle perſpiration during the night; upon the termination of which in the morning they find themſelves very much relieved.

In the fifth and laſt ſection of this work, Dr Bacheracht treats of the cure of ſcorbutics. The courſe of this diſeaſe from its commencement to its greateſt degree of malignity ought, he thinks, to be divided into three periods; in each of which the diſeaſe, he tells us, is characterized by obvious changes. And he contends, that a general or uniform treatment is by no means ſuited to all theſe. In the firſt period, he obſerves, all the ſigns indicate a thickened and viſcid ſtate of the fluids, with a loſs of tone and elaſticity in the ſolids. In the ſecond ſtage, the fluids, he tells us, become attenuated, diſſolved, and acrimonious, with a certain degree of putridity; and the ſolids fall into a ſtate of atony. In the third period, theſe ſymptoms arrive at a ſtill higher degree of malignity; the fluids become

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become abſolutely putrid, and from their cauſtic acrimony, irritate and corrode the parts ſo as to give riſe to extravaſations, hæmorrhagies, putrid fever, dyſentery, and the like.

In the treatment of the firſt period, regard muſt be paid not only to the ſtate of the fluids, but alſo of the ſolids. The fluids are, he thinks, then to be reſtored to their natural condition, by thoſe antiſcorbutic remedies which are capable of attenuating, of puſhing heterogeneous matters to the emunctories, and finally, of evacuating them by urine, by ſtool, or by the ſurface. For this purpoſe he ſtrenuouſly recommends that treatment directed with the view of preventing the diſeaſe. But if this be not attended with the deſired effect, he recommends as attenuants and inciſives, water-creſſes, horſe-radiſh, muſtard, onions, and garlic; and he adviſes as diaphoretics, ſerpentaria, contrayerva, ſaſſafras, guaiac, &c. He adviſes as diuretics, cream of tartar, ſal polycheſt, &c.; as purgatives, tamarinds, caſſia, prunes, ſenna, and rhubarb; as emetics, ipecacuanha and ſquills; as ſtomachics,

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abſinthium, centaury, and gentian; and he adviſes by way of drink, the frequent uſe of beer and wine; in which the young ſhoots of fir, or horſe-radiſh root, have been infuſed. He recommends alſo as a means of promoting perſpiration, the uſe of baths, made of an infuſion of roſemary, marjorum, thyme or balm. To the infuſion of malt recommended by Dr M'Bride, he objects that it often purges too much.

In the ſecond period of the diſeaſe, the hot antiſcorbutics, laxatives, and emetics, are, he tells us, to be laid aſide; and in place of theſe, cooling and aſceſſcent remedies are to be employed, ſuch as the acetoſella, lettuce, oranges, citrons, whey, butter-milk, vitriolic acid, vinegar, Rheniſh-wine, &c. For the particular ſymptoms which then occur, remedies ſuited to the nature of each muſt be employed. For the bloody ſuffuſion of the eyes, he adviſes a fomentation of equal parts of vinegar and wine, with a little ſal ammoniac. When the gums become fungous, with ulcers in the mouth, he recommends that they ſhould be waſhed with a decoction of guaiac

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acidulated with vinegar, or with the mel. rofaceum. For counteracting fpontaneous falivation, he diffuades from the employment of purgatives or blifters: but recommends fudorific decoctions, as thofe of guaiac and faffafras, the frequent immerfion of the feet in warm water, and the fomentation of the parts affected with muftard. For promoting the fuccefs of thefe practices, he advifes the following powder:

℞ Sulph. vivi drachmas tres.
Gum Arab. drachmam unam.
Camph.
Opii. utriufque grana fex, M. f. Pulv. et divid in dos. xii.

One of thefe powders he directs to be taken every four hours: and when the falivation is either ftopped, or even nearly fo, he advifes the addition of a little alum to the gargarifm.

For the fwelling of the legs, he advifes fomentation, with a mixture of vinegar, fpirits, and common water. And when hardnefs and pain occur, he recommends the following liniment:

℞ Ungt.

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℞ Ungt. altheae.
Ol. Lini utriuſque ſeſcunciam.
Camphorae ſemunciam.
Spt. volat. ſal. ammon. drach. tres. M.

When ulcers take place in the legs, he adviſes that they ſhould be dreſſed with the ungt Ægyptiacum, mel roſaceum, or tincture of myrrh, without any ointment. And although mercurials in general have been condemned in ſcurvy as highly prejudicial; yet he aſſerts, that in obſtinate ulcers, he has ſeen the beſt effect from dreſſing them with an ointment formed by mixing a dram of red precipitate mercury with an ounce of baſilicon. Againſt the hæmorrhagies, from whatever part they may take place, he adviſes a decoction of the Peruvian bark, acidulated with ſpirit of vitriol, and an opiate at bed time.

In the third and laſt period of ſcorbutus, the ſymptoms which accompany the diſeaſe are of the moſt alarming nature. Of theſe Dr Bacheracht firſt treats of the ſcorbutic dyſentery, as being one of the moſt remarkable. He adviſes that it ſhould not be ſtopped till the acrimony of the humours has been ſweetened.

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ened. He condemns the uſe of emetics and purgatives; and recommends mucilaginous remedies, with gentle laxatives, as the pulp of tamarinds, caſſia, and ſmall doſes of rhubarb.

He next treats of the putrid ſcorbutic fever; which, when it occurs, may, he obſerves, be conſidered as a proof of the higheſt malignity, and as the forerunner of death. But it ſhould neither, he thinks, lead us to deſpair, nor to diſcontinue attempts to ſave the patient. The practices which he chiefly recommends are, expoſure to free and cold air, waſhing with vinegar, the uſe of wine, and of Peruvian bark.

He concludes this treatiſe with a few general precepts reſpecting the treatment of the diſeaſe; of which the following are the principal:

1. That the ſcurvy, in its earlier ſtages, does not admit of blood-letting, excepting in thoſe caſes where there is a real plethora, and where the ſtrength of the patient permits of it.

2. That purgatives and emetics ought to be employed with great circumſpection.

3. That

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3. That bliſters are much more frequently prejudicial than advantageous.

4. That thoſe liable to fainting ſhould not be expoſed to the air without great circumſpection.

5. That ſcorbutics who have been for a long time deprived of vegetables and fruits, ſhould at firſt be indulged in them with moderation.

6. That the decoction of the young ſhoots of fir, or of guaiac, is in general more ſalutary than that of bark.

6. That mineral preparations; as thoſe of ſteel, antimony, and mercury, are in general highly prejudicial.

7. That the infuſion of malt ought to be uſed with great circumſpection, as often purging too much; and that drink prepared with an infuſion of hops is much more ſalutary.

From comparing the preſent analyſis with that of ſome parts of Dr Blane's book, given in the beginning of this volume, our readers will be able to contraſt the ſentiments of different practitioners, founding their obſervations on extenſive experience, reſpecting the treat-

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treatment of a diſeaſe often productive of the moſt melancholy conſequences: And we may conclude with obſerving, that the diverſity of ſentiment which prevails reſpecting the effects of particular remedies, naturally points out this affection as a ſubject of ſtill further attention.

SECT. II.

Medical Observations.

I.

The History of a Case of Rabies Canina attended with singular Circumstances, and terminating fatally, after a Salivation had been induced by Mercury. By Alexander Gray, *M. D. Surgeon to the 3d Regiment of Seapoys in the Service of the Honourable East India Company in Bengal.*

ON the 15th of December I was called to see a slave boy of about 12 years of age, belonging to Mr Wombwell accountant-general in the province of Oude, who had been bit by a mad dog. On inquiry, I learned that he had been bit about twen-

ty days before, and that the dog had died mad about twelve days thereafter. Examining the ſtate of the wounds, I found in the left thigh five ulcers of a conſiderable ſize, which had continued open ever ſince the accident, two ſmall cicatrices on his left arm, and one on the back. Theſe had been ulcers, and healed up of themſelves; while thoſe of the thigh baffled the power of ſeveral country medicines which had been applied to them. His pulſe was ſmall, quick, and frequent. He was regular in his ſtools; and he complained of headach and chillineſs, with which he had been affected for ſome days paſt.

Although the unſucceſsful experience of others damped every hope of ſucceſs from any attempt of mine, either in the cure of the preſent affection, or in warding off thoſe dreadful ſymptoms which were to be expected; yet the earneſt ſolicitude of the boy's maſter, who wiſhed that nothing ſhould be omitted, induced me to try the effect of ſome of thoſe medicines which are chiefly recommended in this diſeaſe.

I immediately applied lunar cauſtic to the

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ulcers of the thigh, and ſtrong bliſtering plaſter to the cicatrices of the arm and back; and ordered two drams of ſtrong mercurial ointment to be rubbed into the thighs and other parts of the body; and at the ſame time deſired he ſhould take a pill, conſiſting of one grain of calomel and one half grain of opium, every third hour.

Theſe medicines were adminiſtered according to the directions: and on the morning of the 16th, he found himſelf, as he expreſſed it, very well, having very little fever, his appetite good, and the ulcers on the thigh diſcharging very well; while the cicatrices on the left arm and on his back were opened by means of the bliſtering plaſter. What ſeemed a little remarkable, on the opening of the cicatrices by the plaſter, ſmall but deep ulcers appeared underneath, while the neighbouring parts that were equally affected by the plaſter were ſcarcely inflamed. All the ulcers were fumigated with cinnabar, and dreſſed with a plaſter conſiſting of equal parts of diachylon and bliſtering plaſter.

A ſmall room connected to a ſpacious warm bath was allotted him; and during the courſe of

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of the day he ufed the bath feveral times. In the evening, he complained of a forenefs of his gums, but continued the ufe of the pills.

On the morning of the 17th, after a good night's reft, he found himfelf perfectly eafy, with a good appetite, and few or no febrile fymptoms. The gums were fwelled and red, accompanied with a confiderable difcharge of faliva. The ulcers of the thigh, as well as thofe of the arm and back, difcharged freely; and after fumigation were dreffed as before. He had recourfe now and then to the warm bath.

He paffed the night pretty well; and on the 18th found himfelf as before, excepting that there was a greater difcharge of faliva, accompanied with a fwelling and forenefs of the edge of the tongue. He continued the pills, only two every day; and had been frequently in the warm bath, and remained in it half an hour each time.

At nine in the evening his pulfe was rather quick and frequent, attended with confiderable fubfultus tendinum. He paffed the night very difagreeably, and his fleep was

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every moment interrupted with frightful dreams of horſes fighting and going to eat him up. On the morning of the 19th he looked pale and fatigued; but his appetite was not in the leaſt impaired. He continued the uſe of the bath, and with eagerneſs went into it, as he frequently found himſelf chilly. The ſpitting and ſoreneſs of his tongue and gums continued the ſame as the day before. The ulcers alſo diſcharged freely; but the feveriſh ſymptoms increaſed.

He paſſed the night much the ſame as the preceding; and in the morning of the 20th found himſelf extremely fatigued for want of reſt. Now, for the firſt time, he found a difficulty on ſwallowing water; but was able to get down a little by means of a ſpoon. He ſwallowed ſolids with much leſs difficulty. A bliſter was immediately applied to the fore-part of his neck; and was ſo far of ſervice, that three hours after its application he was able to ſwallow liquids with ſome eaſe and without the aſſiſtance of a ſpoon. His eyes had a peculiar keenneſs, and appeared luminated, moving with extraordinary rapidity; and all his actions were performed with a remark-

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remarkable degree of quickneſs. When ordered to go into the warm bath, he ran with the utmoſt precipitation and timidity. His pulſe was ſmall and frequent; and every now and then he ſhrank from thoſe who attended him, frequently mentioning the word *cuta*, which ſignifies a dog, but without appearing ſenſible that he had been hurt by that animal. All the ulcers continued running copiouſly; and as the ſoreneſs of his gums and tongue, with a great diſcharge of ſaliva, continued, the pills were laid aſide, after having uſed ſeventeen of them, beſides two drams of ointment. He was allowed to eat what he pleaſed, as he found his appetite was good, and he had but little difficulty in ſwallowing ſolids. He had no apprehenſion of his danger, and imagined he would ſoon get well. To procure a night's reſt, two grains of opium were given him; but without effect. He paſſed the whole night without cloſing his eyes, and was violently agitated.

On the morning of the 21ſt, attempting to ſwallow a little water, he was thrown into the moſt violent agitations, with diſtortions of the muſcles of his face, and danger of immediate ſuf-

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focation. He was, however, but with much difficulty, able to ſwallow a little water by means of a ſpoon; and with ſome leſs pain and difficulty was able to get down a little bread and butter, which he devoured voraciouſly. He went frequently into the warm bath, and always with pleaſure, finding himſelf cold when out of it. His pulſe continued frequent and ſmall, the gums and the tongue ſore and ſwelled; but the ſpitting was diminiſhed.

Every now and then the muſcles of his face were thrown into quick ſpaſmodic contractions; during which his eyes rolled extremely, as it were with dread of the objects near him, ſhrinking back, at the ſame time puſhing his hands out before him, ſeemingly to ward off ſome diſagreeable object. Theſe fits were only of a moment's duration; nor could he aſſign any cauſe for being thus affected. By 12 o'clock of the day, the fits became more and more ſevere and frequent, attacking him in the warm bath, and moſt certainly the moment he left it. In attempting to approach a ſpoonful of liquid to his mouth, his hand was drawn back as it were

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by enchantment; but wiſhing to ſatiate his intolerable thirſt, he forcibly puſhed his head forwards, which immediately ſhrank back with marks of horror in his countenance; and his whole frame was convulſed for at leaſt a quarter of a minute.

He was more ſucceſsful in his attempts to ſwallow ſolids; and till three o'clock in the afternoon was able to get down a little bread and butter, though with pain and danger of ſuffocation. From that time till ſix o'clock in the evening he frequently went into the warm bath; but the convulſive fits becoming then more frequent and more ſevere, he could ſcarcely be perſuaded to go into it; and the ſimple mention of liquids, and even ſolids, now threw him into the moſt violent fits.

During the laſt twenty-four hours, he complained of acute pains ſhooting from the ulcers of his arm to the neck, breaſt, and head; but had no uneaſineſs from thoſe of the thigh or back.

At ſeven o'clock, his pulſe was ſcarcely perceptible; and about eight o'clock he had none at all in the wriſt, while a throbbing and ſtrong pulſation was felt about the heart;

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the extremities feeling at the ſame time exceedingly cold to the touch. He now became outrageous and frantic during the fits, and three men were ſcarcely ſufficient to confine him to the bed.

The fits became uniformly more and more ſevere, with only a few minutes intermiſſion, and were now accompanied with a quick convulſive motion of the muſcles of the cheſt; during which the air was forcibly thrown out of the lungs, attended with a peculiar and loud noiſe. In the fits, he ſmote his breaſt violently from the anguiſh and pain he felt; crying out that his inſide was on fire; and, in his native language, called to his God to deprive him of life, and relieve him of his miſery.

From ten o'clock in the evening till four o'clock in the morning, when he died, he had continual efforts to vomit, but without effect. In the ſhort intervals between the fits, when he ſeemed to ſlumber, I think I could perceive the ſpaſm, all of a ſudden, commencing at the region of his ſtomach and his throat; and apparently to relieve himſelf from immediate ſuffocation, he ſtarted up

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convulſed, and endeavoured to reſcue himſelf from the hands of the ſervants who had hold of him.

Unleſs during the fits, his intellectual faculties were not the leaſt diſturbed: And the moment before his death he called for a bit of orange; which approaching his lips he immediately expired. Being a gueſt with the maſter of this unfortunate boy, I had an opportunity of marking the gradual progreſs of this dreadful diſeaſe; and during the laſt twelve hours of this affecting ſcene, I was not three hours abſent from him.

While I have to regret with others the inefficacy of the remedies hitherto recommended in the cure of this diſeaſe, I think it will be allowed, that from the preſent caſe demonſtration is afforded of the inutility of mercury, even when carried to ſalivation. The warm bath alſo, although uſed in the moſt commodious manner, and with every aſſiſtance art could give it, appeared to me far from affording even temporary relief.

Had I been as much convinced before as I became after the death of this unhappy boy, of this diſeaſe being ſo perfectly ſpaſmodic, I

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I ſhould have expected conſiderable advantage from the uſe of camphor or muſk, in doſes of one ſcruple, and that frequently repeated through the day, and before the affection of the gullet and ſtomach made any conſiderable progreſs; for after the fits have riſen to a certain degree of violence, probably nature does not poſſeſs a remedy capable either to ſuſpend their force or ſtop their progreſs. I have no other reaſon for imagining that camphor or muſk would be of uſe in this diſeaſe, than their remarkable good effects in the hyſteric affections of this country, when uſed in large doſes. Since in this caſe, and perhaps in many others if duly attended to, febrile ſymptoms and affections of the brain preceded for ſome days the ſpaſmodic contraction of the gullet and ſtomach, the diſeaſed ſtate of theſe organs may be conſidered as the effect only, while the cauſe exiſts in the brain, from the virus being firſt conveyed there.

The general noſological character of this diſeaſe ſeems to me far from being correct; for the hydrophobia, which is marked as the characteriſtic ſymptom, may exiſt without

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any canine rabies. And although a dread of liquids manifests itself as the first alarming symptom of canine madness, the dread and aversion to solids, which symptom soon follows the other, ought also, I presume, to be mentioned as a characteristic of the disease.

About three weeks after attending this boy, a man was brought to me who had been bit by the same dog. He had, however, received but very little injury, being bit only in one place just above the haunch-bone, and through his cloaths. A little blood appeared at the wound, which soon healed up; and he is now to all appearance perfectly well.

Mr Murray, who was formerly an officer in the nabob of Arcott's service, has just now declared to me, that about three years ago, when at Madras, he saw a man brought into the fort raving mad. He had been been bit in the morning by a mad dog, and died in the evening of the same day, tearing and destroying every thing near him.

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II.

The Hiſtory of a ſingular Affection of the Action of the Heart, terminating favourably. By James Bennet, *M. D. Phyſician in Cork.*

AS an inſtance of the difficulty of forming a juſt prognoſtic, as well as of the ſurpriſing efforts of nature, the following extraordinary caſe may not be unworthy of the attention of medical practitioners.

Miſs L——, æt. 10. towards the end of September 1785, was attacked with a raſh, which at that time was frequent in this city. It ſo nearly reſembled the meaſles, that one would be apt to miſtake the two diſorders for each other. This raſh, reſembling the meaſles in the appearance of the eruption, was evidently contagious; or, at leaſt, ſo generally attacked all the children of the families where it appeared, that I cannot help looking on it

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as ſuch. The running from the eyes and noſe was conſiderable; the feveriſh ſymptoms as great as is uſual in meaſles; and the courſe nearly the ſame. The chief diſtinguiſhing character that I could perceive, was the abſence of cough or pulmonic affection. As this, however, is but a negative one, it may be eſteemed as no valid objection to the ſuppoſition of its being meaſles. But a convincing proof of the contrary is, that the children of the family here alluded to, who were attacked with it, had the meaſles long before; and the only child who had them not, eſcaped taking this.

The patient here mentioned had it ſo mildly, that medicines were thought unneceſſary. In about a fornight, however, from the commencement of the raſh, and ſome days after returning to her uſual exerciſe and diet, ſhe complained of a ſwelling of the face; which (as I had not ſeen her for ſome days) I imagined might have been an inflammatory attack from cold; and accordingly ordered, a doſe of Glauber's ſalts, which had little or no effect in reducing it. At my next viſit I perceived that the ſwelling was manifeſtly anaſarcous,

ſarcous, and that the legs were alſo affected in a ſimilar manner; but, as I was informed, ſubſequent to the face. I accordingly preſcribed the uſual diuretics, avoiding thoſe which might injure the ſtomach (already much weakened), ſuch as ſquills, &c. Thoſe that in ſuch caſes I have found moſt frequently efficacious, are ſpir. nitr. dulcis, and infuſ. bacc. juniperi, which have rather the effect of promoting the appetite than otherwiſe. Theſe, however, had ſcarce any effect. On the contrary, the breathing became more laboured; and the following extraordinary circumſtance was noticed:—the child mentioned a conſiderable palpitation of the heart; but whether it occurred before or after the dropſical ſymptoms took place, ſhe could not tell.

On examining, I perceived an uncommon pulſation on the left ſide, at the joining of the fifth and ſixth ribs with the ſternum. The ribs in the region of it were conſiderably elevated; and it communicated ſo forcible a ſtroke to the hand when laid on the part, that, taking every circumſtance into conſideration, I could not avoid concluding it to

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proceed from an aneuriſmal affection of the heart, or ſome of the large veſſels at or near their origin. The pulſe, at the wriſt, was ſmall, tremulous, intermitting, and every way irregular. Alarmed at this diſcovery, I deſired that other aſſiſtance ſhould be called in.

Two phyſicians of eminence accordingly examined the patient; and with little heſitation concurred in the opinion I had adopted, and concluded that medicines of any kind muſt be ineffectual.

I muſt here obſerve, that the pulſation alluded to was at no time abſent, or leſs in degree. Reckoning from the firſt dropſical appearance, ſhe had been ill, at this time, about three weeks; was unable to lie down in bed; the reſpiration very laborious, and conſtantly moaning. From the oppreſſion and deſpondence of recovery, ſhe anxiouſly expected death.

In this ſituation, directions were given to ſupport her with wine; and, in ſhort, to indulge her in any reaſonable deſire. I then diſcontinued my attendance, daily expecting to hear of her death; but was aſtoniſhed when I was informed, in a ſhort time after,

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that her appetite daily mended; a very considerable difcharge by urine, which was heretofore fcanty, took place; and in lefs than a fortnight from my laft vifit, fhe was perfectly reftored to health.

I fhall conclude, by making a few obfervations on the above cafe. And firft, with refpect to its nature, I fhall endeavour to make fome conjecture.

As to its being dropfical in part, there can be no doubt; but whether the accumulation of water was the caufe or the confequence of the extraordinary affection of the heart, may be worth inquiring. In this we would be much affifted, if it could be afcertained which was the firft fymptom, that of the heart, or the dropfical appearance. But this was impoffible, from the inattentive age of the patient; though its pulfation and fituation may warrant any perfon in concluding (if any thing lefs than ocular demonftration may be depended on), that it muft be an aneurifmal affection of the heart or large veffels. But, on the contrary, we muft allow, that the event renders fuch a conjecture improbable; as we know of no inftances where aneurifms

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of large veſſels have terminated favourably, either by art or nature. As to water in the thorax or pericardium producing ſuch a ſymptom, it is more than I find in any author. All thoſe whom I have conſulted, mention the "pulſus exilis, tremulus *," &c. And, indeed, their obſervations are perfectly conſonant to what, reaſoning *à priori*, we would expect; for water, contained in the thorax, pericardium, &c. muſt, we would ſuppoſe, ſuffocate the motion of the heart in proportion to the quantity contained. In this caſe, however, the pulſation was as ſtrong as I have ever felt it in any caſe of confirmed aneuriſm. This ſingularity has induced me to be thus prolix; and to requeſt you would inſert it, if worthy a place, in your very uſeful commentaries, as affording a proper caution to others, with reſpect to the prognoſis, at leaſt in ſimilar caſes.

* *Vide* Sauvage, de Hydrothorace.

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III.

Two Cases of Ulcer in the Cheek, with which the Salivary Duct communicated, cured. By Mr Thomas Gill *Surgeon, Prescot, Lancashire.*

ABOUT the end of August 1778, Mrs Cooper of St Helen's, in this county, several years married, consulted me concerning a tumour on the cheek, which she perceived about two years before. It had gradually enlarged, and was now of the bulk of a middle-sized walnut; and of late it had become very painful. The skin appeared a little inflamed; but, wishing a more perfect suppuration to come on, the part was covered with Boerhaave's emp. nigr.

On the 7th of September she applied again; and the suppuration being now sufficiently advanced, the tumour was opened with a lancet;

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cet; and, after having preſſed out ſome pus, I diſcovered a diſcharge of ſaliva.

This immediately called to my mind the caſe related in the 2d Volume of Medical Eſſays of Edinburgh, by the late Dr Monro.

The cure by ſeton appearing to me very troubleſome, both to the patient and ſurgeon, I determined to make trial of cauſtic. With this view, after aſcertaining with a probe the courſe and length of the ſinus, I introduced a proper-ſized piece of the trochiſci e minio, and retained it in the ſinus by means of dry lint and adheſive plaſter, which were occaſionally renewed.

The eſchar was ſuffered to ſeparate without the application of any force; and, after its ſeparation, I was much pleaſed to find an entire ſtop put to the ſalivary diſcharge. By the application of ſuperficial dreſſings, and taking care to prevent an uneven cicatrix, the cure was completed.

Some time after, another woman having heard of Mrs Cooper's caſe, applied to me on account of an ulcer in the cheek. She had been under the care of a ſurgeon for a conſiderable time; but could not get it healed.

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On examination, I found that there was a discharge of saliva from the ulcer; and treated it exactly after the same manner with the preceding case. The cure was performed with the same ease.

As the trochisci e minio, had recourse to in the above cases, are not noticed in the last London and Edinburgh Pharmacopœias, it may be proper to specify the formula.

℞ Minii semunciam.
Merc. corrosiv. subl. unciam unam.
Micæ panis—uncias quatuor.
Aq. rosarum q. s. f. massa formandis trochiscis idonea.

The troches are rolled into sticks of different lengths and thickness, and of a conical form.

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IV.

The History of a Case of Chorea, successfully treated by means of Camphor. By John Wilson, *M. D. Physician at Mansfield, Nottinghamshire.*

ANN GASKILL, a poor girl, 15 years of age, after having been exposed to cold and wet weather, in August 1786 was seized with irregular convulsive motions of the right arm and leg. These symptoms gradually became more violent and extended. The muscles of the trunk of the body were similarly affected; and the leg and arm of the left side were frequently convulsed. Her head was repeatedly drawn aside; and on lifting any thing to her mouth, her arm was frequently and irregularly retracted. Her body was violently distorted when she attempted to speak, and what she uttered was

 unintelligible.

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unintelligible. The powers of her mind were evidently impaired; and, by the appearance of her countenance, there was no inconfiderable degree of fatuity. Her body was much emaciated; the pulfe was fmall and quick; her fkin parched; what fleep fhe obtained was broken and attended with moaning; her body was bound; the catamenia had never appeared. For feveral months during the firft part of her illnefs fhe was attended by Mr Brook, an ingenious and humane furgeon in this place. He gave her the moft powerful medicines in the clafs of tonics; fuch as bark, zinc, cuprum ammoniacum, chalybeates, mercury, and bitters, without the fmalleft advantage. Wearied at length with repeated ineffectual efforts to relieve her, he defired I would attend her; and I found her with the fymptoms I have defcribed.

Viewing her difeafe as the effect of great mobility in the nervous fyftem, I ordered her one of the moft powerful in the clafs of nervous medicines, Camphor. She began with four grains three times in the day, with a fmall portion of afa-fœtida. Her fymptoms were evidently relieved after fhe had continued

continued her medicine ſome little time. Encouraged by this faint gleam of ſucceſs, I increaſed the doſe of the camphor gradually to eighteen grains four times in the day. This plan ſhe purſued ſteadily, joined with a generous diet, for nearly three months. Every day gave her new incitement to adhere to it; and her perſeverance is now rewarded by the enjoyment of her former health and vigour.

I have ſince given the camphor to an epileptic boy, in doſes of thirty grains, with conſiderable benefit.

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V.

A Letter from Dr Matthew Guthrie *Physician at St Petersburgh, to Dr* Duncan, *on the Effects of a cold Climate on the Land Scurvy, &c.*

I Find myself prompted by gratitude, for the pleasure I receive, on the arrival from Britain of your useful annual publication, to continue contributing my mite to the mass of valuable medical information contained in it.

I frankly confess (and I suppose many other practitioners are in the same predicament), that by the time the business of the day is over, I feel but little inclination to wade for information through the voluminous works published every day on our profession; and still I am anxious to learn every thing interesting and new on the subject in as few words as possible; as there are but few months in the year in which some cases do not

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not occur, where our present means of relief are very inadequate to what a man of any feeling would wish them to be.

If therefore I can, by any remarks that may offer in Russia, repay but a small part of the satisfaction I receive on perusing the communications of your learned correspondents, it will give me much pleasure; and if you think the following worthy of their attention, they are much at their and your service.

Several physicians, I observe, have of late years pointed out the influence of hot climates on the human body, and its diseases; but few seem to have investigated the effects of cold: although I think, from my long residence in this country, that the latter affords matter of inquiry as well as the former. And in a paper on a species of antiseptic regimen, which nature seems in a manner to have dictated to the peasants of this empire, published in the 68th Volume of the Philosophical Transactions of the Royal Society, about the year 1778, I began a train of observations, which I have since continued, and shall now give a few of them, as an appendix to that dissertation, and illustration of its facts.

I there aſſerted, that the ſeverity of the climate, and the dirty unwholeſome mode of living of the common people of this empire, want of proper ventilation, &c. in ſhort, a chain of almoſt unavoidable inconveniences attached to their ſituation for eight months in the year, as fully explained in that paper, muſt infallibly have marked them out as victims to the ſcurvy and other putrid diſeaſes, were they not preſerved from their attack by the regimen alluded to above; ſo highly antiſeptic, and ſo excellently calculated to ward off the diſeaſes which their ſituation threatens, that all the light of modern philoſophy could not have indicated a better; as it ſeems to include all the diſcoveries on antiſeptics of Pringle, M'Bride, Ruſh, Prieſtley, &c. And it is worthy of remark, that the Britiſh philoſophers, and our unlettered peaſants, have both arrived at the ſame great truths by ſuch different roads, though it probably coſt the latter many ages to diſcover what the former have done in a few years. Such is the advantages of ſcientific reſearch, as conducted ſince the time of Bacon and Newton!

Since the publication in queſtion, I have ſeen

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ſeen a melancholy confirmation of the truth of my then hazarded opinion, viz. the true ſea ſcurvy raging on dry land, in all its menacing forms, and filling the hoſpitals of Peterſburgh and Cronſtadt with its martyrs; as the aid of medicine did but very little to confine its deſtructive rage.

This extraordinary phenomenon appeared in the winter of 1785, and was found to have proceeded from a want of thoſe very prepared vegetables on which I have ſuppoſed their ſafety to depend; the crop of cabbage, cucumbers, carrots, turnips, &c. having failed that year, inſomuch as to raiſe the price of the few gathered much too high for the pay of the land and ſea troops; and it was juſt amongſt this deſcription of men that the diſeaſe obtained: for the labourer, in his hire, has an eye to the price of proviſions; whilſt the peaſant in the country finds reſources in ſuch a caſe ſuperior to men ſhut up in large cities. So that the ſufferers are generally thoſe who have a ſmall fixed pay.

Our very enlightened and humane governor of Cronſtadt (Admiral Greig) informed me, that perceiving medicine had but little

effect in the sea-port under his command, he sent over to the opposite continent a number of scorbutics, where they were furnished with more airy warm quarters, and had an opportunity of gathering under the snow a species of berries deservedly reckoned highly antiscorbutic in the north, Vaccinium oxycoccos, called here Kylukova; and probably a few of the Vaccinium vitis idæa, the Brunista of the Russians, another species of northern berries, but neither so efficacious nor so plentiful in winter, as they keep with difficulty under the snow. However, his Excellency assured me, that neither these, nor a plentiful supply which he procured for the sick of the very antiscorbutics, so efficacious in preventing the scurvy when constantly used as an article of food, were equal to the subduing of the putrid diathesis when once fully in possession of the system (a very curious remark in my opinion); nor was it completely vanquished till the kindly influence of the returning sun, and the same efficacious fresh vegetables which he raised in open air, set bounds to its career: although, I cannot help thinking, that the exhalations of the vegeta-

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ting earth, though little felt, has conſiderable effect in ſuch caſes.

I muſt here, I believe, finiſh my remarks on this ſubject, and defer the diſcuſſion of any other relative to the effects of northern climates, if I mean to leave place for a paper of ſome length, which you will probably be curious to ſee; viz. a deſcription of this land *ſea ſcurvy* (if I may be indulged in ſo whimſical a term), raging amongſt troops that had not been from home, as it appeared in the hoſpitals of Peterſburg and Cronſtadt, drawn up for my information by one of our ſurgeons of the navy, who had an opportunity of treating it in both places, being ſent to aſſiſt the ſurgeons of the hoſpital here, after he had ſeen it for a length of time at his uſual reſidence, the ſea-port mentioned above. This I prefer to any thing I can give you from my own obſervation and practice; as the military corps of noble cadets under my care were exempted from the diſeaſe, in conſequence of being well ſupplied with what the troops wanted. However, you may depend on the truth and accuracy of the accounts, as the author, Dr William Brown, formerly

ſurgeon

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ſurgeon both in the Britiſh and Ruſſian navies, now government-phyſician at Kolyvan in Siberia, is a gentleman who does honour to Edinburgh for diligence and knowledge in his profeſſion, joined to great modeſty. I have only explained a few things which he ſet down in the Ruſſian language, as the paper was written only for my peruſal, who of courſe muſt be familiar with them: And I have annexed a calculation he ſent me on another occaſion, of the quantity and quality of the air in the ward of the hoſpital more immediately under his care; wiſhing me to forward a propoſal he had made, of having the ſummer temporary apartments for the ſick, ſo much commended by the benevolent Howard on priſons, fitted up in ſuch a manner as to receive them at an earlier period in the ſeaſon than their ancient conſtructions would admit of, in order to thin the crowded ſcorbutic wards, where the foul air evidently retarded their cure.

I am anxious to inform you, that Mr Fitzherbert's poſtilion, mentioned in the tenth volume of the Medical Commentaries to have been bit by a mad dog, proven to be mad

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(a thing we are ſeldom able to do), and who was treated by mercury, &c. continues perfectly well, and never had any returns of thoſe ſymptoms which ſo much alarmed me before puſhing the unction ſo far as I afterwards did, to the amount of four ounces of the ſtrongeſt unguent. mercuriale pharm. Lond. without having the leaſt effect on the ſalivary glands, or even the gums.

Were one to indulge imagination on this occaſion, we might ſurmiſe, that as opium is aſſerted by ſome learned gentlemen to loſe its ſpecific effects when acting on a ſyſtem tainted with ſiphylis, there is a probability that mercury, when combating rabies, may likewiſe preſent as extraordinary a phenomenon.

The boy, ſoon after his recovery, quitted his Excellency's ſervice, and went to England. However, his fellow ſervants and countrymen kept him in view, at my deſire; although it was unneceſſary, as he has been twice over in Ruſſia ſince.

The circumſtance of opium making ſuch a figure in the laſt volume of your Commentaries, leads me to remark, that if Sydenham

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had practiſed in the north, his enthuſiaſm for opium might have been diminiſhed; as there ſeem to be circumſtances in our climate which prevent its acting as a ſedative in the generality of conſtitutions (a curious ſubject of future inveſtigation); inſomuch, that on looking through a regiſter I have kept of diſeaſes in the public eſtabliſhment under my care, for nine years paſt, I do not ſee I have employed two drams of opium in all that time; and in the genera of fevers, where it is ſo much employed in Britain, not a grain: although, in the liſt of deaths, I perceive that our loſs has been very ſmall indeed, in either the typhus or ſynochus. And although they are the moſt frequent ſpecies we have in common with the reſt of Europe, we ſee as little of the true ſynocha of old authors as you probably do in Britain; I mean in large cities: for in the country I ſhould think it might ſtill obtain; as ſurely there the mode of living cannot be changed ſo eſſentially but that pure inflammatory diatheſis may ſtill attend vigorous health and muſcular force, if ever it accompanied them, as we are taught by our forefathers to believe. But to return to our

opium:

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opium: It evidently appears, that a moſt ſucceſsful practice in putrid fevers may exiſt without the aid of opium. Nay, I cannot help ſuſpecting, that the antimonials uſed by the gentleman in queſtion had their full ſhare in the cures related; eſpecially as that is probably the only remedy that merits the term of ſpecific (if any does), whether in removing febrile ſpaſm or in evacuating morbific matter. As for my own part, I frankly confeſs, that my whole practice in fevers is confined to three or four remedies; viz. antimonials with or without bark, wine, and acids, according as there appears more or leſs ſeptic tendency. And I ſpeak from the regiſter before me, where a large hoſpital-practice is recorded. But I avoid entering into any ſort of detail, being afraid I have already encroached too much. It is always to be underſtood, in ſuch a bare outline, that the occaſional uſe of the lancet, and ſomething to evacuate feces if the antimonials do not act downwards, are included.

May I juſt add to thoſe hints of the influence of climate, that all ſorts of ſtimulating ſudorifics are contraindicated here; as they

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immediately puſh the heat beyond Dr Alexander's ſweating point (which by the by was a good obſervation never purſued), and require a deluge of diluting fluids to bring moiſture on the ſkin, which are almoſt the only ſpecies of diaphoretics we employ.

I will encroach no further at preſent on either your patience or your volume; but reſerve my other obſervations for a future pretence, to aſſure you with how much reſpect and eſteem I am

Your moſt obedient humble ſervant,

MATTHEW GUTHRIE.

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VI.

A Letter from Dr William Brown, *Physician at Kolyvan in Siberia, to Dr* Guthrie *of St Petersburg, giving an Account of the Scurvy which prevailed in Russia in* 1785. *Communicated to Dr* Duncan.

IN compliance with your desire, I shall endeavour to give you an account of the form in which I have had occasion to see the scurvy both here and at Cronstadt.

This disease was accompanied with a great variety of symptoms; all of which seldom or never appeared at the same time in the same patient; nor did they follow each other in any regular progression. In some people, it was first discovered to be present by the appearance of symptoms, which in others did not take place till the disease was far advanced. To give a distinct detail, therefore, of

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ſymptoms, in ſuch a manner as to point out the progreſſive ſtages of the diſeaſe, is very difficult. Hence I muſt be under the neceſſity of relating the appearances without regard to time; and if any were conſtantly remarked to accompany a certain period of the complaint, take notice of them as ſuch.

I had no opportunity of ſeeing the ſcurvy at its firſt attack. We ſeldom get any patients but thoſe whoſe complaints are of conſequence enough to render them incapable of labour: But I think there is great reaſon to believe, that ſcurvy exiſts in the habit for a conſiderable time before the patient arrives at this degree of inability, or indeed perceives himſelf ſubject to any ailment. It is commonly ſaid that lazineſs produces ſcurvy; and ſome phyſicians, and almoſt every body elſe, think they have reaſon to ſay ſo, from the circumſtance of lazy fellows becoming the firſt victims to the diſeaſe. But I am apt to think this deſire of reſt is ill attributed to the ſtate of the diſpoſition, and ought to be conſidered as the firſt appearance of a ſymptom which conſtantly attends the complaint, viz. *debility*. The greateſt number of the ſcorbutics

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butics that I ſaw, were far from being averſe to motion on account of lazineſs; it ſeemed rather from an inability to uſe exerciſe that they wiſhed to avoid it. This ſymptom of debility is a conſtant attendant on ſcurvy, is probably the firſt that marks its attack, and moſt conſtantly attends it in all its appearances, and during its whole continuance; and according to the degree of it induced, we judge of the progreſs the diſeaſe has made. Here, Sir, I cannot help remarking to you, that I, as well as ſome others at Cronſtadt, had occaſion to obſerve the abſurdity, as well as danger, of that maxim ſo much in the mouth of many people, particularly of commanders, viz. of curing the ſcurvy by labour, and what is in England called, "working "the ſcurvy out of their bones." The neceſſity of exerciſe we do not diſpute; but we think it a remedy that ought to be cautiouſly employed in a diſeaſe where effuſions of fluid are ſo apt to occur, and where there ſeems to be a very great degree of leſſened coheſion in the ſolids. We ſaw ſome caſes where the moſt dangerous ſymptoms, viz. pain in the breaſt and oppreſſion of breathing, were une-

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quivocally increafed by exercife, though not violent, yet too unrefervedly employed. The debility mentioned above feemed to take place more particularly in the mufcles of voluntary motion. The force of the heart and arteries feemed in many cafes to be increafed, if we may judge from the ftate of the pulfe. The pulfe was, in many inftances, on the patient's firft arrival at the hofpital, both full and hard. Even in fome cafes where, during the whole courfe of the difeafe, the pulfe had been in a natural ftate in moft refpects, yet a few days before death it attained a wonderful degree of force, with a kind of jumping motion, as if the artery, lying in a loofe cellular fubftance, were confiderably removed from its place on every new influx of blood. The debility did not feem to extend either in a remarkable degree to the ftomach, till a week or fo before death, or on an attack of diarrhœa; in which cafes the fick were unable to eat their portion of food. At other times, they generally afked for and ate what is called ordinary diet *. They very feldom complained

* See the account of hofpital-diet.

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plained of ficknefs at ftomach, or other marks of indigeftion.

Another fymptom frequent, though by no means conftant, was a *quickened pulfe*, with a fmall *increafe of heat;* but without headach, thirft, lofs of appetite, or the other common concomitants of fever. This fymptom feemed to give but little uneafinefs. In fome it attended the whole courfe of the difeafe; in others it continued only a few days, difappeared for a like fpace, and was again renewed. We had fome patients who arrived at the hofpital with fcurvy, and certain appearances of idiopathic fever; but I do not recollect any inftance of any of my patients being feized with any thing but what may be termed a fymptomatic acceleration of the action of the heart and arteries, during their continuance under my care.

A pain in the breaft was alfo a frequent fymptom. This, at Cronftadt particularly, was often the firft complaint; and it was only on the difcovery of other fymptoms which gave no uneafinefs, that we diftinguifhed it from a real pneumonic inflammation. It was attended with all the fymptoms of pneumo-

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nia, and was cured by blood-letting. I ſaw ſome caſes where it was ſo violent as to threaten inſtant diſſolution, and where it was immediately almoſt entirely removed on a very few ounces of blood being taken away. Query, Whether in theſe caſes, particularly where it ſeized the people ſuddenly either at or ſoon after work, it was not owing to the preceding labour?

In other caſes, where the diſeaſe was far advanced, and where the debility was very great, this ſymptom, though not near ſo violent, was found to be a very bad omen. And I think, where I obſerved a great quantity of ſputum, although freely ſpit up with the cough which generally attended this ſymptom for a few days, that it was a more certain ſign of what we had before too much reaſon to dread, viz. a dropſy of the breaſt; which I believe in every inſtance proved fatal. Perhaps in theſe caſes the pain in the breaſt was the conſequence of ſerum already collected there, though not in ſuch quantity, nor attended with ſuch effuſions into other parts, as might more certainly point out the nature of the complaint. The pain in the breaſt, how-

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however, was not always a mortal ſign, although happening in an advanced ſtage of the diſeaſe. It ſometimes made its appearance attended with a cough, remained a few days, and then vaniſhed.

Serous effuſions were alſo common. We had ſeveral patients who came into the hoſpital affected with ſcurvy and dropſy at the ſame time. In theſe caſes, it was difficult to judge which was the original diſeaſe. But the effuſions I mean are thoſe which appeared when the diſeaſe had almoſt finiſhed its courſe, and which were always forerunners of death. Theſe effuſions put on the appearance of anaſarca, aſcites, or hydrops pectoris, or of all three together. Caſes of anaſarca were almoſt always attended with ſphacelus affecting the parts moſt diſtended, chiefly the feet and ſcrotum.

A colliquative *diarrhœa* often preceded, and almoſt always attended, the above ſymptom. It ſometimes took place without it, and had generally as fatal a conſequence. It was on the appearance of theſe ſymptoms that the ſtomach was diſordered. Loſs of appetite was then complained of as well as nauſea.

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A diarrhœa, though never a favourable ſymptom, in caſes where great debility had not yet taken place, was even a common appearance; and from what I obſerved, whether owing to the uſe of medicines or the nature of the diſeaſe, the belly was generally diſpoſed to be looſe. Theſe looſeneſſes, for the moſt part, laſted only a day or two, were productive of no bad conſequences, and were eaſily conquered by a little rhubarb with ſome laudanum: but the others yielded to no remedy I ſaw employed, and were for the moſt part accompanied with gripes, or a fixed pain in ſome part of the belly.

Giddineſs and *fainting* on ſitting up, although mentioned as very common ſymptoms in ſcurvy, were not frequent among the patients I had occaſion to ſee. They were preſent, however, in ſome caſes, particularly the former. One patient fainted on being raiſed twice; but he had been for ſeveral days labouring under a diarrhœa, and was almoſt already in the very jaws of death.

Apoplexy has ſometimes been obſerved. I know of only one caſe, however, in which this diſeaſe ſupervened on ſcurvy. The patient's brain,

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brain, on diſſection, was every where covered with a matter ſeemingly purulent; and a good deal of water was found in the ventricles.

Putrid gums and *fœtid breath* have always been mentioned. Though theſe ſymptoms were generally obſerved, yet we had many caſes wherein they were wanting, although the other inconteſtible proofs of ſcurvy took place. They were commonly attended with a great flow of ſaliva; which, during ſleep, ran involuntarily from the patient's mouth, and was very troubleſome from the circumſtance of rendering it very difficult to keep the pillows and bedding dry.

Hæmorrhagies, particularly bleeding at the noſe, happened to ſeveral. It was moſt frequent in thoſe that had a ſtrong full pulſe, and at the beginning of the diſeaſe. I did not obſerve it to be a common ſymptom in more advanced caſes: nor did it, in any of my patients, nor in any others that I have heard of, occaſion fainting and death. I had ſome that ſaid they ſpat up blood; but as their gums were affected, I was not clear of the fact. One ſaid he paſſed bloody urine,

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but he recovered; and, on inquiry, I found we had only his own word for it.

The external appearance of the limbs was of three kinds: *1ſt*, The legs and thighs became tumid, reſembling an ædema; though with this difference, that they ſeldom attained that dead paleneſs which attends dropſy; nor were they often affected with inflammation, as is the caſe with ſwellings of the feet, when the ſkin is much ſtretched with water. They pitted on preſſure. This tumidity frequently appeared in the face, which was often the only part ſwelled. This caſe was almoſt always attended with bad gums, and often with a difficulty of breathing from effuſions into the thorax. It was chiefly in this ſpecies of external appearance that the large, purpliſh, black diſcolourations, took place. Theſe principally affected the inſides of the thighs, knees, and calves of the legs; the inſides of the arms, and parts around the eye, reſembling a black eye from a blow. There was, however, no part of the body exempted from them; or, at leaſt, they were not entirely confined to the parts mentioned; for I have ſeen them entirely covering one ſide of the breaſt

or

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or belly. When they affected the hams and thighs, they were generally conjoined with contractions of the tendons, which rendered it impoſſible to extend the limb. They were alſo ſometimes accompanied with a hardneſs of the parts over which they were ſituated: More generally the parts ſeemed to the feel to have only acquired a greater degree of plumpneſs and elaſticity. The 2*d* kind was different from the above, in as much as it was attended with little tumor, but with redneſs and great hardneſs. This always affected the leg below the knee, and principally the ankle joint. I ſaw it in no other part of the body. The colour was nearer that of eryſipelas than that of phlegmon; but it differed eſſentially from both, never terminating in ſuppuration, nor ſpreading, nor riſing into bliſters. It was perfectly indolent and chronic; and it was chiefly obſerved in thoſe people who had been formerly ſubject to ſcurvy. To the touch, it was very hard; and gave the leg, as far as it extended, the feel of a piece of wood. This ſpecies was often without tumor; and, on the contrary, there was often a waſting of the limb.

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limb. It chiefly affected the ankle joint, which it generally deprived of motion entirely; affording an appearance, as if the bones of the foot and leg had grown together, and formed only one ſubſtance. The 3*d* kind conſiſted in a ſhrinking, roughneſs, and dryneſs of the ſkin; which was every where covered with a number of purple ſpots, about the ſize of a ſmall grain of barley. Theſe ſpots were ſcattered over the whole ſurface. They were alſo obſerved ſometimes in the tumid limbs, though not commonly. All theſe caſes were accompanied equally with contractions of the ham-ſtrings; though theſe contractions did not neceſſarily accompany them, nor take place in every individual. Pains in the knees, calves of the legs and ankle-joints, were a very general complaint, and attended the diſeaſe during its whole courſe. Hardneſſes were alſo generally felt in the calves of the legs and muſcles of the thighs towards the knee, although no external diſcolouration took place.

Ophthalmia ſcorbutica deſerves alſo to be mentioned. This conſiſted in an effuſion of red blood under the tunica conjunctiva, and appeared

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appeared as if the whole or a part of the opaque cornea was covered with a clot of blood lying upon its outſide. On nearer inſpection, it was ſeen to lie under a membrane, from which it derived its bright ſhining colour. At a little diſtance the opaque cornea ſeemed to be elevated above the plane of the lucid cornea, which appeared as it were in the middle of a clot of blood. I ſaw no caſes where the effuſion was continued beyond the margin of the lucid cornea, or where this ſeemed in the leaſt affected with the diſeaſe, nor where the humours of the eye ſeemed to be in the leaſt ſubjected to any change from the preſence of the diſeaſe. It was ſometimes the only ſymptom of ſcurvy preſent, and was attended with no pain or other inconvenience, except what aroſe from the deformity. In other caſes it was joined with an inflammation of the edges of the eye-lids, as well as with the more common ſymptoms of ſcurvy.

Ulcera ſcorbutica were ſufficiently common. Theſe ſometimes began with the appearance of a ſmall red ſpot, which gradually increaſed without much, or indeed any, active inflammation. They had more the appearance

of

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of a bliſter, with a very thick covering, than of a ſuppurating tumor, and contained a fluid of a deep blackiſh red colour; which colour they imparted to their covering. On being opened, they diſcharged a thick bloody ſanies, and were ſometimes found to have covered a ſinous ulcer.

Swelling of the joints of a ſingular nature took place in ſome patients. This I had occaſion to ſee in one under my care; and I have received a more particular account of it from Mr Maximovitich, an ingenious ſurgeon, who has particularly attended to the method of cure and appearances on diſſection. My patient had been long ill of the ſcurvy. The firſt appearance of this ſwelling began with a pain in his ſhoulder, which was the ſeat of the diſeaſe. Some days after I found the whole ſhoulder tumid; but without any diſcolouration, or the feel of an inflammatory congeſtion. The tumor continued increaſing for ſome time, when he found an inability to raiſe his arm; not on account of any pain the motion gave him, but owing to a kind of paralytic affection of the muſcles deſtined to ſerve this purpoſe. His ſhoulder

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was now much ſwelled, the ſcapula being removed to about the diſtance of an inch and half from the ribs; which gave the patient the appearance of having a hump on his ſhoulder. There appeared alſo to be a collection of matter under the ſhoulder; and under the edge of the latiſſimus dorſi muſcle, towards the arm-pit, a ſeeming fluctuation was felt. In any other than a ſcorbutic caſe, I ſhould have been led to make an inciſion, with a view of evacuating the ſuppoſed matter; but recollecting that Dr Lind obſerved ſuppuration very ſeldom, if ever, to take place in ſcurvy, and well knowing how common effuſions of ſerum, &c. are made into the fibrous ſubſtance of muſcles themſelves, as well as into more lax parts, I was contented to look on the tumor in that light, and wait for the recovery of the patient's general health, as the beſt means of relieving him from this ſymptom. This ſeemed to be alſo the opinion of Dr Mattei, the phyſician to the hoſpital, as he only ordered ſome topical applications. As the patient got better of his ſcurvy, the tumor began to diſappear, and he was in a way of recovery, when he was put from under

der my care upon a new regulation in the diſtribution of the ſick. Mr Maximovitich tells me, that he, being deceived by the appearance of fluctuation in theſe tumors, with the conſent of Dr Mattei, opened three of them; one ſituated in the ſhoulder, and two in the knees. Two of theſe patients died, the opening having degenerated into a bad ſore, and the ſcurvy, in other reſpects, becoming worſe. On making the inciſion, he was ſurpriſed to find that not one drop of matter appeared, though in one caſe the opening was made to the bone. On diſſection, he found in one caſe the ſcapula, and under it the ribs, carious. In both there was a good deal of matter reſembling the juice of currants, effuſed into the cellular membrane, and even into the ſubſtance of the muſcles themſelves. In the other caſe the wound became a bad fungous ulcer, which yielded to no method of cure he could think of, till he tried the following medicine, which has a place in ſome diſpenſatories under the name of

Aqua vulneraria thediana.

℞ Aq. acetoſellæ.

Spir. vini rectificat.

Spir.

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Spir. vitriol. ten. *aa* lbij.
Sacch. albi lbj. M. et digere octo dies in B. M.

By the uſe of this water, the ulcer was cleaned and afterwards healed. He has applied this medicine to ſeveral of theſe tumors ſince, and has always found it to anſwer without opening them.

I have taken no notice of the deſpondency and lowneſs of ſpirits mentioned as a general attendant on ſcurvy. This undoubtedly took place amongſt us; but it is not eaſy for a foreigner, who is not thoroughly acquainted with the language and ordinary manner of the Ruſſians, to form a good judgment of its degree. The daily inſtances of the fatality of the diſeaſe, muſt undoubtedly have occaſioned many melancholy reflections; nor would the crouded manner in which they were diſpoſed for want of room, ſerve much to exhilirate their ſpirits. Perhaps the anxious and ſuſpicious inquiſitiveneſs with which ſome of the commanders inquired after the treatment they met with in the hoſpital, though undoubtedly well intended, did more

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hurt than good; as it induced the ſick to have a diſtruſt in thoſe about them.

To give ſome idea of the ſtate of the air in the ſea hoſpital at Peterſburg, I made the following calculation:

One of the Wards is,

	Feet.	Inches.		
In length	40	6	Therefore contains of air, in cubic feet,	10206
breadth	28	0		
height	9	0		
During the winter 1785-86, there lay in this ward 48 ſick perſons; the bulk of whoſe bodies was at leaſt two cubic feet each: therefore ſubtract				96
The quantity of air in the ward				10110

N. B. I take no notice of the beds, peeches, ovens or ſtoves, and other furniture neceſſary for the ſick; as the ſpaces in the walls made by the windows perhaps equalled theſe.

Suppoſe the pulſe of the ſick were, at an average, 80 in a minute, and that the pulſe beats four times every reſpiration; then theſe 48 men would breathe 806400 times every 24 hours.

Every reſpiration, at the loweſt computation, a man breathes 15 cubic inches of air.

Hence

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Hence theſe 48 men, in 24 hours, breathed 7000 cubic feet of air.

The room contains	10110
The patients breathed	7000
Remain	3110

If to the deſtruction or defilement of air by breathing, be added the other ſources of inquination from the putrid exhalations ariſing from the bodies and excretions of the ſick, it is eaſy to conceive in what an impure air the patients muſt have lived, and that a freer ventilation than the climate will admit of, was neceſſary to preſerve the purity of this vital element; and at the ſame time the propriety and neceſſity of removing the ſick early in the ſpring to thoſe temporary buildings named Cogers, is very obvious.

Hospital Diet.

Ordinary diet: A pound and half rye bread every day.

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Ordinary diet: Half a krufhka, or one bottle, of beer.

Sundays, Tuefdays, and Thurfdays, one pound frefh meat, with broth: other days half a pound, with broth.

Cafha (porridge of buckwheat) with butter, every day.

Some falt.

Milk diet: About a pound fecond flour bread.

Half a krufhka new milk.

Half a krufhka kifcell (or fowens,) every day.

Diet with fowl: White bread as above.

Half a fowl with foup.

Pulmentum: Bread, as above.

Thin kafha, or porridge of buckwheat.

The drink for thofe that have not beer is given according to the prefcription of the practitioner.

HOSPITAL

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HOSPITAL BEDDING AND CLOATHING.

A cravat (or bed-ftead) with a canvas bottom.
A rufh-bed, and over it a wylock, or mattrafs.
Pillow, with pillow-cafe.
Sheets and woolen coverlet.
Cloathing: A linen night-cap; a pair ditto trowfers and fhirt; flippers; alfo two or three fhubes (or fur coats) in winter, and night-gowns in fummer, to every ward.

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VII.

A Letter to Dr Duncan *from a Friend in London, giving an Account of the Use of Injections with Spirit of Wine in the Cure of Gonorrhœa; with Remarks on the Treatment of Eryſipelatous Inflammation, and other Medical Obſervations.*

I Find the moſt efficacious, leaſt painful, and eaſily procured injection for venereal gonorrhœas, to be pure rectified ſpirit of wine, diluted with ſix or eight times its bulk of water; or to ſuch a degree that the injection gives only a few moments ſmarting pain, without heat, after it is thrown into the urethra. If this be uſed within a few days after the gonorrhœa has appeared, from the trials I have made, and thoſe of my pupils, I believe it will, nine times in ten at the leaſt, cure the complaint. It ſhould be injected

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ted every three hours, or oftener, till the running begin to diminiſh (which it will do in a day's time), and then it is required leſs frequently.

I was led to this remedy, by conſidering, that inflammation of the ſkin, and of the urethra, and other membranes that open externally, only differ in the one being a ſecreting membrane, and the other not; and, therefore, as we diminiſh or cure the inflammation of the ſkin by ſpirit of wine (as in burns, eryſipilas, &c.), we ſhould expect it to be equally efficacious in inflammation of the ſecreting membrane of the urethra.

In the common eryſipilatous inflammation of the ſkin, with a fever preceding and attending it, I in all caſes uſe opium, in quantity from a quarter of a grain to half a grain every four to ſix hours, and give one purging doſe of cryſtals of tartar. External-ly, I always cover the inflamed ſkin with a mixture of lapis calaminaris, and farina of wheat or oats, and foment it thrice a-day with a decoction of poppy heads, chamomile flowers, St John's wort, adding ſpirit of wine to the extent of one-ſixth of the bulk of the decoction.

The

The Peruvian bark I exhibit with the opium as much as the patient's ſtomach will bear without ſickneſs, in powder, decoction, and tincture; but only in thoſe caſes where I am apprehenſive of a gangrene, where the patient is extremely weak and of a bad habit, or where ulcerations are likely to enſue. Otherwiſe, I find the opium, purging once or twice, and topical applications, ſucceſsful; and Peruvian bark unneceſſary, and perhaps hurtful.

Where the patient is young, the habit good and ſtrong, the pulſe ſtrong and frequent, and other ſymptoms are preſent of increaſed and inflammatory action of the ſanguiferous ſyſtem, but where the inflammation is purely of the ſkin, I do not bleed, but I purge every ſecond day, and exhibit opium as above mentioned: But if in ſuch a habit, the parts ſubjacent to the ſkin be inflamed conſiderably, I employ blood-letting as well as purging; and I ſtill exhibit opium, and uſe the above topical external applications. I rarely have occaſion to give the Peruvian bark, and ſtill more rarely to uſe blood-letting; opium and purging, with topical applications, being all that

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that is generally required. The diet is of milk and farinaceous matter.

The volatile alkali I almoſt always uſe in preference to the fixed vegetable alkali; but the foſſil alkali preferably to the volatile alkali, as diuretics in dropſies.

As a purgative and diuretic, I find nothing ſo effectual and ſo agreeable to the ſtomach as the cryſtals of tartar; which are now growing more than ever into uſe, while the digitalis is declining, and will I think ſoon ſuffer its former fate. The acid of tartar promiſes to be more efficacious than the cryſtals of tartar. It is eaſily obtained by decompoſing the tartar with lime, and then waſhing off the alkali, and afterwards decompoſing the tartariſated lime by vitriolic acid.

The inflammation and ſuppuration under the pſoæ muſcles do not occur ſo often as has been ſuppoſed; becauſe I find on diſſection, diſeaſes that were called pſoas abſceſſes, were abſceſſes under the glutæi muſcles, and others were abſceſſes among the muſcles of the thigh. It is not difficult to diſtinguiſh inflammations which end in ſuppurations among muſcles, particularly under the pſoæ, even in their

firſt

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firſt ſtage, provided the hiſtory be properly obtained, and that compared with the rheumatiſm and other reſembling diſeaſes.

I have lately made the moſt agreeable purgative neutral we have in the materia medica, by ſaturating the foſſil alkali with phoſphoric acid, which cryſtalliſes into rhomboidal cryſtals, that are neither very ſalt nor at all bitter. Like Glauber's ſalt, they contain above half their weight of water in the cryſtalliſed ſtate. It requires about the ſame quantity as of Glauber's ſalt to purge a patient. The acid of phoſphorus I make with great eaſe and in the cheapeſt way, by dephlogiſticating the phoſphorus itſelf by means of nitrous acid, as in the dephlogiſtication of ſugar in making ſaccharine acid.

Nitrous æther I make with great eaſe with Wolfe's apparatus, from nitre, vitriolic acid, and alcohol, as directed by Mr Wolfe; and am ſurpriſed it is ſo little known or uſed. I prefer it much to vitriolic æther.

A bath from 80° to 85° is conſiderably more ſtrengthening than the common cold baths; becauſe it can be longer applied, and the cold be diffuſed more completely through the

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the ſyſtem, without affecting the ſanguiferous ſyſtem ſo much as the cold bath.

The vitriolic acid not only cures the itch, but various other eruptions; and I have ſome proofs that the other foſſil acids produce the ſame effects as well as alum.

I uſe mercury in dropſies always externally; by which method I have the benefit of friction, and avoid diſordering the ſtomach and bowels.

It appears from diſſections, that porter-drinkers are as ſubject to diſeaſed viſcera, and aſcites conſequent thereto, as drinkers of ſpirits.

VIII.

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VIII.

A Letter from Dr Graham *at Stirling to Dr* Henry Galloway, *giving an account of violent Pains from a particular Species of Worm under the Skin. Communicated to Dr* Duncan.

IN the month of Auguſt laſt I was conſulted in the caſe of John Stewart, a young gentleman about twelve years of age, in the country of Appin. For ſome time paſt he had been afflicted with excruciating pains in his limbs, and other parts, to ſuch a degree as to render his life completely miſerable. This was aſcribed to his having got his cloaths drenched with rain in a boat as he was fiſhing in the night-time. Believing his caſe to be entirely rheumatic (which I ſtill think it was in ſome degree), I could do little more, at ſo great a diſtance from medical help,

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help, than to direct him to be wrapped in flannel, and to blifter the parts occafionally which were moft pained.

In January laft I received a letter from his father, dated the 17th of that month; of which the following is an extract:

"I am now favoured with both your let-"ters; by which I find you prefcribe no "kind of medicines for my fon, who ftands "much in need of relief; this very day be-"ing one of his worft. But one thing "has happened to him which I dare fay "will furprife you. About eight days ago "he difcharged two worms; the one from "his breaft, the other from his knee. For "fome hours before, he was like to go di-"ftracted with racking pain in both places. "Ever fince he had fome refpite till this "day. We have one of the worms prefer-"ved in fpirits. It is near an inch long, all "in joints in the back, with a hard fcale on "it. I am pofitive he has more of them, "from the manner of his complaint now. "Pray have you any knowledge of thefe "creatures? Or is there any affiftance can "be given in getting quit of them? I am

" positive he has the rheumatism, with this " unlucky addition."

In answer to this I wrote, that the boy had probably slept on the grass, or been otherwise exposed to some kind of flies, which, piercing the skin, had lodged their ova in the puncture. These being hatched, and the maggots come to maturity, and now probably ready to become aureliæ, they made their way through the skin in search of a proper place where they might undergo that change; and that, consequently, I hoped he would soon be entirely freed from his troublesome guests. Meanwhile, I asked the favour of the father to send me a few of the worms.

In another letter, dated 24th January, he says, " Since I wrote my last, another worm " came out of Jack's knee, of which I was " an eye-witness, attended with racking pains. " The pain got to his head two days ago, " and so swelled it that he sees but a little in " one eye. Last night he was blistered be- " hind his neck; but no relief as yet. In " short, he is in a miserable situation, and " has lost his appetite entirely."

Soon after this he discharged another worm

from

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from above his eye, and others from different places; all, ſo far as I could learn, ſuch as are expoſed to the air, and to which the flies might have had acceſs.

A few days ago I had another letter, dated the 15th April; which ſays, "Jack is ſtill "tormented with vehement pain in the foot "and knee alternately; and the cold water "is the only thing which gives him eaſe. "No ſwelling: and, even in the time of the "pain, he can ſuffer it to be rubbed hard; "which he could not do when diſcharging "the worms. And the pain is now quite "different from what it was at that time. "I ſend a ſmall vial with three of the worms." Theſe I now ſend you, together with a dried one in another vial, which appears to be of the ſame kind, and which I received on the 15th of February laſt. It was diſcharged from another young man in the weſtern parts of Perthſhire: And I have heard of ſeveral other boys in the Highlands, who were afflicted with the ſame diſorder this laſt winter.

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IX.

A Letter to Dr Duncan *from Mr* Thomas Hamilton *Student of Medicine at Edinburgh; on the benefit of Cyder in the cure of Dropſy, and on the induction of artificial Emphyſema.*

YOUR communicating to the world whatever regards the reſtoration of health to mankind, or whatever may contribute to the advancement of any branch of medical ſcience, prompts me thus to lay before you a fact reſpecting the cure of dropſy, which a few days ago, I had the happineſs of hearing you ſpeak of, with ſo much preciſion and judgment. I am induced to mention this practice, as you did not take notice of it in your lecture: and perhaps (in this country, where the article is little made uſe of, and in general but little known unleſs at ſome particular

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cular taverns in the ſummer ſeaſon) it has never had a fair and candid trial by individuals or practitioners. The article to which I allude is the liberal uſe of cyder, as practiſed with very great ſucceſs among the common people of Devonſhire; a county in England where it very much abounds, and is to be had in the greateſt perfection, and cheaper than ſmall-beer. I can with confidence aver, that I have ſeen cures performed by it, where no other medicine or regimen had been uſed, and that too in the advanced ſtate of anaſarca or general dropſy: And it ſeldom fails in local or partial dropſies, in the incipient or advanced ſtates. It is drunk of plentifully, perhaps to the amount of two or three Engliſh quarts a-day. Here is then a very large quantity of fluid taken, in one day, which muſt, in ſome meaſure, invalidate the prevailing opinion, that the profuſe uſe of fluids is pernicious in this diſeaſe.

In what particular manner this medicine operates, I will not preſume to ſay, as I only mean to mention the fact. But, with all deference and ſubmiſſion to your ſuperior

 judgment,

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judgment, I ſhall, with the utmoſt diffidence, offer you my opinion.

In ſo far only as the diſeaſe depends either upon a local or general relaxation or debility, or a loſs of tone and power in the abſorbent ſyſtem, or when the exhalant is ſo redundant as to overpower the abſorbent functions, when there is no ſuſpicion of ſcirrhus in any of the viſcera, or when the diſeaſe has not been uſhered in by jaundice, it may, in ſome meaſure, depend on its cooling aſtringency, having a moſt peculiarly grateful cordial acidity, of which thoſe patients are particularly greedy. Perhaps it may operate gently in the way of diureſis and catharſis; or as ſtimulating the abſorbent ſyſtem in general. But if conjoined in the way of regimen or drink, along with thoſe very powerful remedies you mentioned, I doubt not of the happieſt ſucceſs attending it. It allays the immoderate thirſt, and prevents the deſire for liquids; which alone is a great object. Thus it may be ſubſtituted for other drinks, and be a convenient vehicle for other medicines, as the bark, &c.

I here, likewiſe, take the liberty of offering

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ing you a hint refpecting the nature of emphyfema; which only ferves further to corroborate your opinion of the nature of that difeafe. Though the natural difeafe has never occurred to me, I have feen the artificial one in the higheft perfection, and in the living human body too. This odd fort of language may perhaps ftartle you a little. It is a practice, though happily not a common one, and as happily little known among the vulgar. But there are a few who know it, and turn it very much to their advantage; I mean among feamen and foldiers. For there is, perhaps, no fet of men (excepting flaves) who have more frequently recourfe to impofition, and who are more fkilled in producing difeafes. Thefe men make a fmall puncture or incifion into the cellular membrane of the fcrotum, into which they introduce a blow-pipe, and inflate the whole fcrotum to a moft enormous fize, exactly refembling a rupture; and this extends up the inguen to the infertion of the chord. This they practife to obtain their difcharges from the fervice. And thus the fkill and judgment of furgeons, in both army and navy, are doubly employed, in the de-

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tection of impoſture, and the cure and diſcovery of real diſeaſe; which every charitable man muſt allow is not always in the power of any human being. I had this confeſſion from one whom I was employed to examine as an object for invaliding; whoſe anſwers to the queſtions I put to him, reſpecting his diſeaſe, were ſo evaſive and contradictory, as to lead me to ſuſpect a falacy, which I at length detected.

X.

X.

An Account of the uſe of the Pepper Medicine of the Weſt Indies in the Cynanche Maligna. Extracted from a Letter written by Mr James Stephen, *Surgeon in St Chriſtophers, to Dr* Thomas Cochrane *Phyſician in Edinburgh. Communicated to Dr* Duncan.

IN the month of June 1786, we had a very long tract of warm ſultry weather, notwithſtanding frequent rains. It was remarkably calm during this and part of the following month. The thermometer in the ſhade for ſeveral days ſtood at 91½. Many children, and not a few adults, were attacked with the cynanche maligna, as defined by Dr Cullen. It yielded to the uſual remedies, viz. emetics and calomel boluſes, with James's powder, at night; and the Peruvian bark, ſnake-root, and wine, during the day. If

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the fever was attended with great heat, we gave the ſnake-root with nitre. This method, with the aſſiſtance of detergent gargles, and ſometimes bliſters round the neck, in general anſwered pretty well.

This ſpecies of cynanche was not always attended with any miliary eruption. When an eruption did occur, I could not obſerve that the fever was abated on its coming out; nor were any of the other ſymptoms manifeſtly or conſiderably alleviated. But in caſes where the eruption did take place, the patients in general recovered ſooner than where there was no eruption.

During the laſt weeks of July, and during the whole of Auguſt, a ſore throat of a different kind prevailed. The uvula and tonſils appeared of a pale red colour, as if diſtended with water, and the uvula in particular ſeemed to be exceedingly relaxed. There was, however, no great difficulty in ſwallowing. The pulſe felt very low, and was at the ſame time very quick. There was no increaſed heat on the ſkin; on the contrary, it was often rather cold, with clammy ſweats. The patients at the ſame time complained of great

laſſitude

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laſſitude and oppreſſion of ſpirits; and they were frequently affected with delirium. But this was not a conſtant ſymptom. For the moſt part, on the third day, a tough white ſlough was obſerved to cover the uvula and tonſils; this very ſoon aſſumed a dark duſky colour, and the parts emitted a great fetor.

This ſore throat, notwithſtanding the liberal uſe of Peruvian bark, ſnake-root, and wine, with the moſt ſtimulant gargles, proved very fatal among the children. At this juncture the following receipt appeared in the Antigua newſpapers, as an uſeful remedy in this diſeaſe:

Take two table-ſpoonfuls of ſmall red pepper, or three of the common Cayenne pepper, and two tea-ſpoonfuls of fine ſalt; beat them into a paſte, and then add to them half a pint of boiling water. Strain off the liquor when cold, and add to it half a pint of very ſharp vinegar. Let a table-ſpoonful of this liquor be taken every half hour as the doſe for an adult; diminiſhing it in proportion for children according to their age.

As the remedies mentioned above had all

failed

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failed of producing the desired effect, I resolved to make trial of this; and I was surprised at the rapid success attending its use. The slough in a short time began to separate, the spirits were immediately raised, and a kindly heat was soon excited, accompanied with a gentle moisture on the skin.

This medicine I am confident saved many, when no hopes were entertained of their recovery. I have seen patients with a glossy eye, with the pulse almost entirely sunk, and incapable of articulating a single word, who were yet rescued from this state by the use of the medicine I have mentioned. I am within bounds when I say, that I have administered it to four hundred patients with the happiest success. I have also used the same preparation of the pepper in the cynanche maligna with very great benefit. It promotes perspiration; it is a strong stimulant, and has all the effects of a powerful antiseptic.

Let me also mention another practice which may perhaps be new to you in Europe. In three cases of the dry belly-ake, when every remedy usually recommended had failed, the sand-box seed, or Hura crepitans of

Lin-

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Linnæus, procured evacuations without any griping: but it left behind it an amazing languor. In two of theſe caſes, the patients had for ſome time an almoſt conſtant vomiting; which, however, was checked by the uſe of columbo-root. In the other caſe, only one ſeed and a half was uſed. This doſe operated in about two hours, and was not followed by vomiting.

The French phyſic-nut leaves, or Jatropha multifida of Linnæus, had been uſed without any benefit in two of theſe caſes. This remedy has in general been had recourſe to in ſuch caſes, as the laſt reſource; and in moſt inſtances it is very effectual. In Long's hiſtory of Jamaica, he repreſents the ſand-box ſeed as being ſo violent a draſtic purgative that it can never be employed with advantage. Theſe caſes, however, contradict his aſſertion, as no violent gripings were excited by its uſe. Two ladies of my acquaintance, concluding that it would be a pleaſant purge, eat half a ſeed each. It operated briſkly, but without griping them; and it left behind it that languor which I have formerly mentioned.

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XI.

Florum Arnicæ optimi effectus in promovendo Menſium Fluxu in Virgine octodecem annos nata, nondum antea lunare profluvium paſſa, inſtituto inſuper naturali uſu artuum inferiorum per triennium paralyſi correptorum, obſervante Chriſt. Jac. Theoph. de Meza, *M. D. Medicinæ et Artis Obſtetriciæ. Pract. nec non Memb. Reg. Soc. Med. Hafn. ordin.*

PUELLA quindecem fere annorum, tenera nervorum compage donata, choreis forſan æquo plus data, huic oblectamento non ſemper innoxio, per integram indulget noctem, ut tandem laſſata ſed non ſatiata matutinis recedens horis, ſe quiete ac ſomno tradiderit, ad undecimam antemeridiem uſque. Poſt meridiem autem, ſatis alacriter ſe habens, veſtes ſibi induit, amicam tripudii nocturni comitem

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comitem viſura. Viam tenens audit ululatum horrendum, indeque metu perculſa properat amicæ domum. Ibidem advenienti occurrit canis ſemimortuus, ante ejus pedes cadens utpote a carnifice male multatus. Terribile hoc ſpectaculum tantam vim exercet in nervos, natura vel et forſan ſaltatione prægreſſa magis irritabiles redditos, ut dicto citius omnino caderet ſenſibus orba. Domum fertur, ibidemque adhibitis variis auxiliis et remediis non niſi poſt dimidiam horam ad vitam evocatur. Surgere conanti e ſella pedes fallunt, horumque uſum eidem denegunt ſenſu et motu carentes. Hoc in ſtatu curru vehitur proprias in ædes, ibidem ſecundum artem curanda, atque pedum paralyſi ſtatim ſupervenit brachiorum reſolutio.

Conſulitur medicum utique doctum et expertum, qui nihil non adhibet quod artis eſt ad hunc morbum curandum, ſcilicet venæſectiones, veſicantia, verberationes urticis, cucurbitulas, embroche calidum et frigidum, optima antiſpaſmodica, roborantia, unguenta acria et ſtimulantia, fonticulos; neque tamen valet reſtituere motum artubus inferioribus, ſuperiores enim inde vigorem recuperabant

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priſtinum; unde mœrore et tædio affecta omnibus remediis valedicit, ſortem patienter latura. Hoc modo autem tolerantes ſellæ ut machina quæ ope et elatere indiget, ſi movere vult, affixa per aliquot annos, ſatis bene ceteroquin, circa finem Decembris 1785 annum ætatis adimplens decimum octavum, corripitur febre tertiana regulari, quando meum auxilium petitur. Cum vero ex relatis crederem hanc febrem haud inutilem fore ad paralyſim extremitatum ſolvendam, evacuantibus tantum utendum eſſe puto, donec aliquot paſſa eſſet paroxyſmos; atqui tam moleſti hoſpitis pertæſa, intenſe præcabatur ut ad acheronta eum quantocius relegerem. Ideo præſcribo tanti uſus, ac forſan nunquam ſatis laudandum in hoc affectu, corticem Peruvianum doſi ordinaria. Sed quamvis ſtatis temporibus accurate atque exacte hoc præbium uſurparetur, febris tamen de tertiana fiebat quotidiana; indeque accedo ad vires Gei urbani tentandas, cui quoque febris reſiſtens in quartanam mutabatur, quæ nec unciis quinque Gei cedebat.

Nunc vero in uſum vocabam in quartano adeo laudatam Arnicam formula ſequenti:

2 ℞ Flor.

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℞ Flor. Arnici, ℥i. coq. in aq. puriſs. ℔ij. ad remanent ℔i. col. add. ſal. ammon. ʒiii. ſyr. quinque rad. aper. ℥ii. M. cujus decocti hauriendus erat parvus cyathus omni trihorio.

Priori præbio aſſumpto, poſt horæ quadrantem oppreſſiones oriebantur, pectoris cum anxietatibus, et doloribus in infimo ventre, nec non cephalalgia. Pulſus fiebat celer, concomitante nauſea. Verum enimvero nec inde territus, ſuadeo ne ab ulteriori remedii uſu deſiſtat; illaque alacriter alteram haurit doſin, quæ, in minori gradu quamvis, excitaverat vi ſua activa cardialgiam, cum calore totius corporis. Ad tertium præbium autem tolerabiliora fiebant ſymptomata, et dimidia hora elapſa poſt quartum præbium ſentit fluidum quid effluere e vagina; indeque animo attento ac anxio quærens quid eſſet, en non ſine admiratione ſanguinem vidit ex virginitatis antro prodire, qui forſan nunquam antea in amabili ſexu quam in noſtra cum tanta utilitate fluxit. Nam eo ipſo momento temporis ſentiebat, quadam titillatione et formicatione circa tibiam, ſe pedes et crura habere. Inſequenti die eoſdem extendere valebat, ac demum tertio die incedebat ſaltabat-

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que more aliarum virginum gaudentium cruribus firmis. Nec tamen ſtatim ab uſu decocti arnicæ diſcedebat. Febris ab eo quoque tempore non rediit. Brevi autem poſt remedio valedicens, menſium vero periodo regulari utique gaudet.

Corrolaria.

Nervorum debilitatem, indeque inſequentem majorem ſenſibilitatem, plurimum contribuere ut quædam in talibus ſubjectis vehementius operentur quam in aliis, non eſt quod præcipue ab hoc caſu demonſtrare conatus ſum utpote nimis notum et triviale. Sed quod indicare volo eſt, quod cauſæ allatæ poſſint contribuere ut eadem ſubjecta nunc minus nunc magis ab uno eodemque objecto afficiantur. Viderat enim hæc virgo tales ſcenas aliquando, non ſine horrore quidem ſed nunquam tali cum eventu ac hac ultima vice, cujus cauſa abſque hæſitantia ex choreis prægreſſis nimiam laſſitudinem et majorem debilitatem inducentibus deducere licet. Haud inficias ibo, hominibus debilioribus

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corporis motum conducere quo roborantur fibræ mufculares nervorumque fyftema, indeque fanguinis circulationem humorumque fecretiones et excretiones haud fatis regulares forfan in fimilibus ad meliorem reducuntur ordinem. Equidem haud negandum eft faltus et tripudium inter corporis motus recenfenda, ac facillime præ aliis ob oblectamentum quod afferunt præferenda: fed modus, quo noftris temporibus choreæ ducuntur, nunquam fanitati conducere poteft, dum fit nimia vehementia, diuque nimis protrahitur, in conclavibus nimis calentibus, candelarum fumo et hominum vaporibus repletis, indeque fudor manat laffans, viciffim et alternatim repulfus, iterumque corpore fluens, non fine fanitatis detrimento nervorumque debilitate; inde, uti opinor, noftra magis ab hac trifti fcena afficiebatur quam alias.

Nec eft quod dubitemus arnicam in minori dofi, quamvis ac per aliquot vices ufurpatam, fanitatem noftræ reftituiffe. Tenfiones, anxietates, palpitationes cordis, cephalalgia, calores et dolores in infimo ventre, fatis teftantur de efficacia hujus remedii qua egerit in omnia vafa ac diftenderit uterina. Hocque

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que modo vias aperuerit diutius forſan emanſæ jamjam vero prodituræ menſtruationi *. Nec incredibile menſium profluvio artuum paralyſin ſolutam fuiſſe †. Senſum formicationis in cruribus ſenſu ſemper carentibus, nunquam calentibus, ipſo tempore quo menſes prorumpebant, monſtrat et vaſa cruralia ſpaſmodice contracta, modo jam dilatari viamque patulam ſic ſanguini fluenti pandi.

Num vero febris fuerit naturæ conamen ad promovendam menſtruationis negotium, veriſimili ſatis videri poteſt; quamvis mea ex ſententia, hoc negandum puto, dum ſeptem paroxyſmi ante febrifugorum uſum, cæterique ſcil. horum uſum nullum ſymptoma ceu menſium prodromum excitarunt ante arnicæ aſſumptionem, a qua abdominis cruciatus cætera ſequebantur.

SECT.

* In menſium ſuppreſſione, horumve obſtructione, commendat de la Marche.

† Arnicæ in paralyſi virtutem, multis experimentis, in quamplurimis ægrotis inſtitutis, probat Clar. Collin. In paralyſi artuum inferiorum ex pondere dorſo illapſo opem tulit et infuſum florum ingeſtum et cataplaſma ex floribus paratum, referente Plenkio.

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SECT. III.

Medical News.

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ABOUT the beginning of February laſt, the College of Phyſicians of Philadelphia publiſhed the following account of their eſtabliſhment and conſtitution.

"The phyſicians of Philadelphia, influenced by the conviction of the many advantages that have ariſen in every country from literary inſtitutions, have aſſociated themſelves under the name and title of The College of Phyſicians of Philadelphia.

"The objects of this College are to advance

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the ſcience of medicine, and thereby to leſſen human miſery, by inveſtigating the diſeaſes and remedies which are peculiar to our country; by obſerving the effects of different ſeaſons, climates, and ſituations, on the human body; by recording the changes that are produced in diſeaſes by the progreſs of agriculture, arts, population, and manners; by ſearching for medicines in our woods, waters, and the bowels of the earth; by enlarging our avenues to knowledge from the diſcoveries and publications of foreign countries; by appointing ſtated times for literary intercourſe and communications; and by cultivating order and uniformity in the practice of phyſic.

"For the purpoſe of obtaining theſe objects, the following rules have been adopted.

"1. The College ſhall conſiſt of twelve ſenior fellows, and of an indefinite number of junior fellows and aſſociates.

"2. The ſenior and junior fellows ſhall reſide in the city and diſtrict of Southwark, or liberties of Philadelphia.

"3. The aſſociates ſhall conſiſt of perſons of merit, in the profeſſion of medicine, who do

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not live within the limits defcribed for fellows, without any regard to diverfity of nation or religion.

"4. The junior fellows fhall confift of fuch practitioners of phyfic as are of good capacity, of good moral character, and decent deportment, and who are not under twenty-four years of age.

"5. The fenior fellows fhall be chofen from among the juniors by the feniors only, within one month after a vacancy is declared. The junior fellows and affociates fhall be chofen by the joint votes of all the fellows. Three-fourths of the whole number of fenior fellows fhall concur in the admiffion of feniors, and three-fourths of the fellows fhall concur in the admiffion of juniors and affociates.

"6. All laws, regulations, and appointments to offices, fhall be made by a majority of the joint votes of all the fellows.

"7. The officers of the College fhall confift of a prefident, vice-prefident, four cenfors, a treafurer, and fecretary; who fhall be chofen annually from among the fenior fellows, on the 1ft Tuefday of July.

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"8. The ſtated meetings of the College ſhall be on the firſt Tueſday of every month. Beſides theſe meetings, the preſident, or, in his abſence or indiſpoſition, the vice-preſident, ſhall have power to call extraordinary meetings whenever important or unexpected buſineſs ſhall require, of which he ſhall be judge. It ſhall likewiſe be in the power of any ſix fellows of the College who concur in their deſires of a meeting, to authoriſe the preſident, or, in his abſence or indiſpoſition, the vice-preſident, to call it.

"9. The buſineſs of the cenſors ſhall be to inſpect the records, and examine the accounts and expenditures of the College, and to report thereon. And all communications made to the Society, after being read at one of their ſtated meetings, ſhall be referred to the cenſors, and ſuch other members of the College as ſhall be nominated for that purpoſe, to examine and report thereon to the College; who ſhall determine by a vote taken by ballot on the propriety of publiſhing them in their tranſactions.

"10. The buſineſs of the ſecretary ſhall be to keep minutes of all the meetings and tranſ-

actions

actions of the ſociety, and to record them in a book provided for that purpoſe; and likewiſe to receive and preſerve all books and papers belonging to the College, and letters addreſſed to them.

"11. The buſineſs of the treaſurer ſhall be to receive all the moneys of the College, and to pay them to the order of the preſident or vice-preſident only; which order ſhall be the voucher of his expenditures.

"12. Every member of the College ſhall have a certificate of his election, with the ſeal of the College affixed thereto, ſigned by the preſident and vice-preſident, and counterſigned by the cenſors and ſecretary. The ſtyle of all certificates, and of all addreſſes from the College, ſhall be as follows: The Preſident (or Vice-Preſident), and College of Phyſicians of Philadelphia.

"13. No aſſociate who comes to reſide within the limits mentioned in the ſecond rule, ſhall be admitted to a fellowſhip in the College, without being elected in the manner preſcribed for the admiſſion of junior fellows. No new member ſhall be choſen who has not been propoſed at a previous ſtated meeting.

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"14. No law or regulation ſhall be adopted that has not been propoſed at a previous ſtated meeting; Nor ſhall any part of the conſtitution be altered, without being propoſed for conſideration for three months. The preſident, or vice-preſident, when he takes the chair, ſhall have no vote, except in queſtions where there is an equal diviſion of voices. Two-fifths of the fellows ſhall be a quorum for all buſineſs, except the election of members, the expenditure of money, the making of laws, or the altering of the conſtitution. In all theſe laſt caſes, a majority of fellows ſhall be a quorum.

"15. Every fellow, upon his admiſſion, ſhall ſubſcribe to the above rules, as a teſtimony of his conſenting to be bound by them. He ſhall, at the ſame time, pay into the hands of the treaſurer the ſum of eight dollars, towards eſtabliſhing a fund for the uſe of the College. He ſhall likewiſe pay two dollars annually for the ſame purpoſe.

"The following phyſicians are the preſent members of the College:

Senior

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SENIOR FELLOWS.

John Redman	Abraham Chovet
John Jones	John Morgan
William Shipper, jun.	Adam Kuhn
Benjamin Rufh	Gerardus Clarkfon
Samuel Duffield	Thomas Parke
James Hutchinfon	George Glentworth.

JUNIOR FELLOWS.

Robert Harris	John Carfon
Benjamin Duffield	WILLM. W. Smith
John Foulk	Samuel P. Griffiths
James Hall	John Morris
Andrew Rofe	WM. Clarkfon
WM. Curry	Benjamin Say.
John Lynn	

" All communications that are included in the objects of the College, fpecified in the preamble of the conftitution, may be addreffed to the fecretary (poft paid when they are fent by that conveyance), or to any other fellow of the College.

" It is to be hoped the friends of medical fcience

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ſcience in every part of the United States, will concur in promoting, by uſeful communications, the important deſigns of this inſtitution.

Publiſhed by order of the College,
JAMES HUTCHISON, *Secry.*"

The preſent officers of the College are,

John Redman Preſident
John Jones Vice-Preſident
W^M. Shipper, jun. } Cenſors.
Benjamin Ruſh }
John Morgan }
Adam Kuhn }
Gerardus Clarkſon Treaſurer
James Hutchinſon Secretary.

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The following remarkable circumſtance has been communicated to us from a ſurgeon in the country. Whether there has been any deception with reſpect to it, we will not pre-

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tend to ſay; but we truſt that our readers will excuſe us for preſenting to them the account that has been tranſmitted to us.

A woman, in the 64th year of her age, who had been long married, but who never had any children, became affected, about 20 years ago, with different ſtomach complaints. Her appetite was at times uncommonly keen; but ſhe was particularly diſtreſſed with ſevere thirſt, in ſo much that ſhe was often under the neceſſity of drinking five or ſix quarts of water, or ſimilar fluids, in the courſe of a day. She was, however, free from any fever; her belly was regular, and her urine in the uſual quantity. She had uſed a great variety of ſtomachic medicines, but without deriving any benefit from them. Her complaints increaſed to ſuch a degree that ſhe was confined to bed. After ſhe had been ſo for about eighteen months, a doſe of the pilulæ mercur. laxant. was given her. In the pot which ſhe uſed during its operation, a ſubſtance was obſerved, which, when examined, was found to be an entire animal; and it in every reſpect reſembled a common ſnail, freed from

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from its ſhell. This ſubſtance ſhe is herſelf very confident that ſhe diſcharged by ſtool. Some weeks afterwards another animal of the ſame kind was alſo obſerved in the pot ſhe uſed; and this ſhe is likewiſe convinced was diſcharged in the ſame manner.

* * * *

A learned and ingenious phyſician in England, in a letter to Dr Duncan, gives the following account of the effects he has obtained from expreſſed oils taken internally for medical purpoſes.

" I am trying the effects of expreſſed oils on the human ſyſtem. The oleum amygdalarum, and the oleum lini ſine igne, I find to be very uſeful medicines: for when they agree with the ſtomach, they are pretty certainly laxative, without griping. In this manner they are highly uſeful in the piles attended with conſtipation; and they will eſ-

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ſentially relieve not only recent, but ſome very obſtinate, coughs, when other medicines have failed. I ſay when they agree with the ſtomach; for not unfrequently a ſickneſs and regurgitation will make a part of their operative effects for ſome hours after each doſe. This diſagreement with the ſtomach depends ſo much upon idioſyncraſy, that when it happens I have been obliged to lay them aſide, after trying them repeatedly even in the ſmalleſt doſes. On the other hand, in ſtomachs leſs delicate, and not affected from ſuch a peculiarity, I can generally adminiſter almoſt whatever quantity I pleaſe without the leaſt inconvenience. My general doſes are from half an ounce to an ounce of the pure oil, three times a-day; which may be ſtill enlarged if needful. I give them either ſimple or combined with an equal quantity of common diſtilled water, by adding ten or twenty drops of the ſpiritus volatilis aromaticus to each doſe. This preparation will ſit eaſily on the ſtomachs of ſome patients, when the ſimple oils will not. I find that the oleum amygdalarum agrees in general much better than the oleum lini. But the latter is more

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laxative, and I think its curative effects are more pointed.

Of late I have made some trials with what Dr Rutty calls the oleum sinapinum, or the expressed oil of mustard-seed, in a few rheumatic cases; but without any obvious relief. I find it to be laxative in a slight degree, somewhat similar to the oleum olivarum. My plan of trying the effects of medicines being much the same as if I had no previous knowledge of them, will not allow me at present to make farther observations on these articles with confidence. But hereafter I hope to give you more useful remarks.

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The lymphatic vessels have lately been injected with uncommon success at Dr Monro's anatomical theatre in Edinburgh. One preparation, particularly, shows a much greater number of large lymphatics, or what may be called trunks of these vessels, both in the su-

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perior and inferior extremities, than are delineated in any of the beſt anatomical plates on that ſubject which have hitherto been publiſhed. Dr Monro has been at very great pains in having accurate drawings made of theſe veſſels, after careful diſſection: And it is to be hoped, that he will ſoon communicate to the public the light which has thus been thrown on this branch of anatomy.

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At the laſt meeting of the Harveian ſociety of Edinburgh, inſtituted in honour of Dr Harvey, and held annually on the anniverſary of his birth-day, Dr Webſter delivered a diſcourſe on the life, writings, and character, of the late Dr John Gregory, profeſſor of the practice of medicine in the univerſity of Edinburgh. After this, the annual premium given by the ſociety was publicly delivered to Mr Benjamin Smith Barton of Philadelphia; who was found to be the

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the author of a diſſertation on the nature and properties of the Hyoſciamus niger of Linnæus; to which was prefixed for an epigraph, "Non fingendum aut excogitandum, ſed inveniendum;" and which, in the unanimous opinion of the judges, was the beſt preſented to the ſociety on that ſubject.

Into the different important particulars contained in this diſſertation, which affords indiſputable evidence of the judgment, induſtry, and ingenuity, of its author, we cannot at preſent propoſe to enter. We may, however, obſerve, that, following the injunction given in the motto prefixed to his paper, it has been his invariable object throughout the whole, not to ſearch for evidence of any preconceived theory, but to diſcover truths ſubſervient to utility. He has been at much pains to detect the active conſtituent parts of hyoſciamus. For this purpoſe he has carefully examined it in the ſtate of extract, where it is previouſly freed from all thoſe parts of the growing vegetable which are merely of a watery or herbaceous nature. And by a ſeries of experiments no leſs accurate than deciſive, he found, that from twelve

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drams of this extract, in a ſtate apparently pure; five drams of a gummy matter and two of a reſinous ſubſtance, will, at a medium, be obtained. He has found, that in this quantity, even of the beſt extract, from three to four drams of a feculent matter, is ſtill contained. And he has alſo demonſtrated, that in all pharmaceutical trials, where any evaporation can take place, a conſiderable portion of the moſt active part of the plant is loſt.

He next proceeds to determine its effects on the ſyſtem of man and of other animals. And here, from a ſeries of experiments ingeniouſly deviſed and carefully executed, he has been able to preſent us with an accurate account of the influence, not only of the extract in general, but of its gummy and reſinous parts in particular, on the living body. Theſe experiments, which were begun upon himſelf, and confirmed by ſimilar trials on others, clearly prove the ſedative power of this ſubſtance. For the name of ſedative may unqueſtionably, with the ſtricteſt propriety, be affixed to a ſubſtance which has undeniably the effect of diminiſhing the celerity

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and impetus of the motion of the blood, and of inducing a ſtate of ſleep, the grand compoſer of nature. In one inſtance only, during the courſe of his experiments, did he find, that very ſoon after the hyoſciamus was exhibited, the celerity and fulneſs of the pulſe were a little increaſed. But in that caſe, the reſinous part of the hyoſciamus was exhibited diſſolved in alcohol; and trials afterwards made, left no room for doubt, that this effect on the circulation was to be attributed to the ardent ſpirit alone.

Without attempting to give any farther account of the different facts diſcovered by Mr Barton's experiments, we ſhall only ſhow the extent to which they were carried, by relating a ſingle experiment, which demonſtrates in the cleareſt manner the active powers of this article.

Four grains of the reſinous part of the extract of hyoſciamus united with twelve of the extract of liquorice, were given to a vigorous man in the 24th year of his age. In twelve minutes after it was taken, its effects firſt became obvious by a ſlight diminution of the celerity of the pulſe. From this time it became

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came gradually more ſlow and feeble, till, within the ſpace of little more than an hour, it had ſunk from eighty-five to fifty-nine ſtrokes only in the ſpace of a minute; and it had at the ſame time become very ſmall. During this progreſs, the countenance became gradually pallid; vertigo enſued, with dimneſs of ſight; ſickneſs at ſtomach was ſucceeded by vomiting; and univerſal debility ſupervened, attended with trembling of the whole body, and remarkable coldneſs of the extremities, till at length even deliquium animi took place. In this ſtate it was thought adviſable to terminate the experiment, by having recourſe to the volatile alkali and a glaſs of ſpirits. This ſoon enabled him to walk out into the open air: But for ſome days afterwards food was difficultly retained on his ſtomach, and ſeveral looſe ſtools were the conſequence of the medicine.

This quantity then of the reſinous part of the hyoſciamus, at leaſt with thoſe not habituated to the uſe of it, was even beyond the maximum doſe, for uſeful purpoſes. This experiment clearly proves, that thoſe deleterious effects even to the human ſpecies, which

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have been attributed to this vegetable, have not their foundation in popular prejudice, but in fact: And when contrasted with the other trials, of which an account is given in Mr Barton's essay, it demonstrates the truth of what has lately been asserted by an eminent English physician, "Poisons in small doses "are the best medicines, and the best medi- "cines in large doses are poisonous."

We shall not at present enter any farther into the different particulars contained in this dissertation; but shall conclude with obser- ving, that from the facts here brought to light, there is reason to infer, that hyoscia- mus will not only furnish an excellent sub- stitute for opium, perhaps the most import- ant article with which the materia medica has yet been enriched, but will also in certain cases enable us to obtain most, if not all, the good effects to be derived from that valuable medicine, without those inconveniences of which, in certain constitutions, it is known to be productive. And we have little doubt, that by means of this too-long neglected ve- getable, growing with spontaneous luxuriance in almost every part of our own island, the

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calamities and ſufferings of the human ſpecies may in many inſtances be ſucceſsfully alleviated and removed.

After the delivery of the prize for 1786, the ſubject announced for the prize-diſſertations of 1787, was an experimental inquiry concerning the chemical and medical effects of thoſe ſubſtances called Lithontriptics, particularly their effects on the human calculus. It is not here expected, that the experimenter ſhould turn his attention to every inſignificant article which has been ſuppoſed to poſſeſs the power of diſſolving calculi. The reputed lithontriptics to which it is wiſhed that candidates ſhould chiefly turn their attention, are the acids, eſpecially the aërial and the mineral acids; and alſo the alkalis, both in their mild and cauſtic ſtate. On this ſubject, the late experiments of Scheele and Bergman, aſcertaining with greater preciſion than had before been done, the real conſtituents of the human calculus, cannot fail conſiderably to aid the inveſtigation. But although much has already been done, yet much ſtill remains to be aſcertained, much to be diſcovered; and a certain degree of ſucceſs, at leaſt,

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can hardly fail to reward the labours of every diligent inquirer.

But while lithontriptics were propoſed as the ſubject of prize-diſſertations for 1787, a ſubject of inveſtigation was alſo propoſed for 1788, which affords ample ſcope for the exertions of ingenuity, of judgment, and of induſtry: An inquiry, viz. into the nature and properties of the Nicotiana Tabaccum of Linnæus, into the different active conſtituent parts of this vegetable, their effects on the human body, and their uſe in the cure of diſeaſes. On this ſubject alſo much has been done with ſucceſs. While the celebrated Fontana has ſhown that the oil of tobacco is one of the moſt active poiſons in nature, and that too even in conſequence of the ſlighteſt impreſſion to a recent wound, the induſtrious Dr Fowler has demonſtrated that this vegetable furniſhes us with one of the moſt effectual remedies in the cure of dropſies. Their labours, however, in place of exhauſting the ſubject, have merely pointed out what yet remains to be diſcovered, and have opened to the view of future inquirers a mine from whence medicine may be enriched.

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Diſſertations on the firſt of theſe ſubjects muſt be tranſmitted to Drs Duncan or Webſter by the firſt of January 1788, and on the laſt by the firſt of January 1789. Each diſſertation muſt be accompanied with a ſealed letter, containing the name of the author, and bearing the ſame motto with the diſſertation.

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The Royal Medical Society of Edinburgh have diſtributed the following program reſpecting their prize-medal.

" Societas Regia Medica Edinenſis, Rei philoſophicæ incumbentibus, S. et O.

" Cum ea ſit Academiarum, quæ per philoſophicam late rempublicam hodie increbreſcunt præcipua mens et conſilium, ut omni qua poſſint opera, ſcientiis promovendis adlaborent, nihil ſe præſentius præſtaturos exiſtimarunt, quam ſi poſitis in medio præmiis æmulos eruditorum conatus accenderent. Ne

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igitur in ſtudiis nos communibus obmuteſcere videamur, quæſtionem quotannis palam proponere decrevimus quam ea qua par eſt induſtria excuſſam præmio condecorabimur. Inter plurimas autem eaſque graviſſimas quæ nuperis annis agitatæ fuerunt queſtiones, nulla philoſophorum ingenia magis exercuit, quam quæ varias aërum ſpecies earumque proprietates explorabat. Attamen, quum ipſarum nondum penitiorem indolem introſpiciamus, parumque conſtat quid eæ, quam præcipue colimus ſcientiæ, utilitatis ſint allaturæ, quæſtionem hanc publici juris faciendam hodie cenſuit Societas :

" Quot ſunt aërum ſpecies ? Quænam ſingularum natura et in medicina vires ?

" Cum nulla hodiernis chemice philoſophantium laboribus magis conſentiat, non pauca ut ſperamus neque ea poenitenda futura ſint, quæ hac in re experimenta inſtituentur.

" Quemcunque vero hujuſce præmii honorem, conſcia mens facultatum ambire ſuaſerit, diſſertationem ſuam Anglicè, Gallicè, vel Latinè conſcriptum, ante Calen. Jan. 1789, Edinam ad eos qui ad acta edenda a ſecretis fuerint,

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mittendam curabit, addita ſimul chartula nomen domiciliumque indigitante, eodemque ſigillo et ſymbolo, quo diſſertatio ipſa munita. Qui quæſtionem propoſitam ex judicio arbitrorum optime enucleaverit numiſmate pretio viginti aureorum Anglicorum remunerabitur. Quæ autem diſſertationes Societatis non æque votis reſpondent, exeunte anno, ſi ita auctori viſum fuerit intactæ igni tradendæ ſunt."

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The Medical Society of London, inſtituted in the year 1773, in order to excite practitioners to bring thoſe talents to light which would otherwiſe lie buried and uſeleſs to the community, propoſed, on their firſt inſtitution, to hold forth honorary rewards to thoſe who ſhould improve the medical art. And they reſolved to give a ſilver medal annually to the author of the beſt memoir that ſhould be communicated within the year. This was

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to be decided by the Fellows of the Society; who being judges of the merit of competitors, cannot be candidates for the prize.

Besides this, Dr Lettsom, a worthy and zealous member of the Society, has also vested in the public funds a sum of money sufficient to enable the Society to give annually a gold medal of the value of ten guineas, subject to the following regulations.

Regulations respecting the gold medal, founded in commemoration of Dr John Fothergill.

1. That the medal be given annually to the author of the best dissertation on a subject proposed by the Society; for which the learned of all countries shall be invited as candidates.

2. Each dissertation shall be delivered to the Secretary, written in a legible hand, in the Latin, English, or French language, at least two months before the meeting for adjudging the medal.

3. With it shall be delivered a sealed packet, with some device on the outside, and within the author's name and designation.

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4. The ſame device ſhall be put on the diſſertation, that the Society may know how to addreſs the ſucceſsful candidate.

5. There ſhall be a committee appointed by the Society, for the purpoſe of adjudging this medal, conſiſting of the council; to whom ſhall be joined ſuch other members as the Society ſhall think proper; and their ſentence ſhall be final.

6. The medal ſhall be adjudged on the eighth day of March, that being the birth-day of the late Dr Fothergill. The firſt medal ſhall be adjudged in the year 1787.

7. No diſſertation with the name of the author affixed can be received, that the committee may decide on the merits of each, without any knowledge of, or partiality for, the author.

8. All the diſſertations, the ſucceſsful one excepted, ſhall be returned if deſired, with the packets unopened, which contain the names of the authors.

The following queſtion was propoſed as the ſubject of the firſt prize.

What diſeaſes may be mitigated or cured by

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by exciting particular affections or paffions of the mind?

The prize for this queftion was adjudged in favour of Dr William Falconer of Bath, correfponding member of the Medical Society.

The following queftion is propofed as the fubject for the prize-medal for the year 1788:

How is the human body in health and in a difeafed ftate affected by different kinds of air?

And for the year 1789, the following queftion is propofed:

What circumftances accelerate, retard, or prevent the progrefs of infection?

The meetings of this Society are held in a fpacious houfe in Bolt Court, Fleet-ftreet, which was generoufly given them by Dr Lettfom, as well as the patronage of the Fothergilian medal. The fociety confifts of phyficians, furgeons, and apothecaries, divided into fellows, correfponding members, and candidates. The number of fellows is reftricted to thirty in each branch of the profeffion, who alone direct the affairs of the fociety, and who muft be fettled in bufinefs

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either in the city of London, or within ſeven miles of it. When any one of the three claſſes has thirty fellows, thoſe of that profeſſion who may deſire to become members, can be admitted only on the liſt of candidates. But the number of theſe, as well as of the correſponding members, is unlimited; and no perſon is eligible, as a correſponding member, who reſides within ſeven miles of London.

The Royal Academy of Sciences at Bourdeaux have conferred a prize on Mr Parmentier, for having furniſhed them with the beſt ſolution of the following queſtion:

Quelle ſeroit le meilleur procedé pour conſerver le plus long tems poſſible, ou en grain ou en farine, le Mais ou blé de Turquie? Et quels ſeroient les differens moyens d'en tirer parti dans les années abondantes, independamment des uſages connus et ordinaires dans cette provence?

Of this queſtion Mr Permentier is ſaid to have furniſhed the Society with an excellent ſolution; and it is now, we are told, publiſhed, with many important additional obſerva-

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tions respecting the natural history and culture of the plant.

The Royal Academy of Sciences at Brussels have proposed the following prize question for the year 1787:

"Optat Academia, ut quum Melolontha vulgaris, sive Scarabæus melolontha Linn. præsertim ejusdem larvæ, tam copiose multiplicentur, magnasque clades in arvis producant, remedia tuta atque probata inveniantur indicenturque, quibus hæc insecta facillime, minimisque sumptibus, in diversis metamorphoseos statibus imminui vel eradicari queant."

The Royal Society of Sciences at Copenhagen have lately proposed three prize questions in the following terms:

" 1*mo*, Certis experimentis gravibusque argumentis declaratum dare, Utrum corporum calor sit effectus materiæ calefacientis in corporibus calidis obviæ neque ad corporum substantiam pertinentis, an certus motus particularum corpora constituentium, adeoque tantummodo quædam modificatio?

" 2*do*, Theoreticam explicationem optimæ aratri fabricæ pro agrorum diversa indole, diversoque situ.

" 3*tio*,

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"*3tio*, Ut diſtincte accurateque determinentur plantæ, tum in littore maris, tum in aliis Daniæ regionibus creſcentes, quarum uſus ſit ad arenam volantem quam vocant coercendam, ita ut uniuſcujuſque plantæ figura laudetur aut in flora Danica, aut ſi ibi deficiat, aliis in bonæ notæ libris, una cum fructificationis partibus obvia."

The Academy of Dijon, ſome time ago, propoſed the following prize-queſtion:

"Quatenus Phlogiſton differret a materia caloris?"

As they have not received a ſatisfactory anſwer, it is again propoſed to the conſideration of the learned competitors for this prize, which is now a double one. Competitors muſt tranſmit their diſſertations to the ſecretary of the ſociety before the firſt of April 1789.

The ſociety of Leipſic have again repeated the following prize-queſtion, which they had formerly propoſed.

"Exponatur Hygrometriæ hiſtoria, a prima ejuſdem diſciplinæ origine ad hæc uſque tempora, ſimulque inſtrumenta indicentur eaque quæ ad perficiendam hanc diſciplinam etiamnum reſtant, enumerentur."

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They have alſo propoſed the following queſtion: "Phœnomena electrica ex reciproca actione duarum ſibi oppoſitarum materierum electricarum, earumque varias relationes ad alia corpora, experimentis explicentur et comprobentur; inſimulque hæc hypotheſis cum aliis præſertim cum Frankliniana comparetur."

Diſſertations on theſe ſubjects muſt be tranſmitted to Profeſſor William Aug. Erneſti before the firſt of January 1788.

On the 15th of July 1786, a meeting was held of the Royal Society of Gottingen, which their Royal Highneſſes Prince Erneſt Auguſtus and Adolphus Frederic, ſons to his Britannic Majeſty, honoured with their preſence. Seven diſſertations were conſidered which had been tranſmitted to the Society on a queſtion formerly propoſed, reſpecting the moſt healthful conſtruction of villages. The firſt prize was adjudged to a diſſertation which had for its motto, "Lorſque l'on veut changer les moeurs," &c. And upon opening the ſealed letter which accompanied it, the author of it was found to be Nicolaus Beckman of Harburg, member of the Societies of Gottingen, Brunſwick, and ſeveral others. The

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acceffit was adjudged to a differtation which had for its motto, "Laffet uns wirken weil es Tag ift." But the Society will not publifh the name of the author without his confent.

The Royal Academy of Sciences and Belles Lettres at Nancy, have propofed an extraordinary prize, founded by M. de la Porte, intendant of the province of Lorraine, for the beft folution of the following queftion:

1mo, Y a-t-il des fignes certains de l'exiftence d'une mine de trouille ou charbon de terre dans un terrain quelconque?

2do, Quels font les cantons de Lorraine ou l'on peut prefumer qu'il exifte de ces mines?

3tio, Quelle feroit la methode la plus facile et la moins difpendieufe d'en conftater la decouverte?

The prize is twenty-five Louis d'ors, and will be determined on the 8th of May 1788.

The following prize queftions have fome time ago been propofed by the Royal Society of Medicine at Paris.

Determiner quelles font les circonftances les plus favorables au developpement du vice fcrophuleux, et rechercher quels font les moyens foit dietetiques foit mèdicinaux d'en retarder

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les progrès, d'en diminuer l'intenſité, et de prevenir les maladies ſecondaires dont ce vice peut etre la cauſe.

The prize is ſix hundred livres.

Determiner, par l'examen comparé des propriétés phyſiques et chemiques, la nature des laits de femme, de vache, de chèvre, d'aneſſe, de brebis, et de jument.

The prize is twelve hundred livres.

Determiner, 1*mo*, s'il exiſte des maladies vraiment hereditaires, et quelles elles ſont; 2*do*, s'il eſt au pouvoir de la médecine d'en empecher le développement, ou de le guerir apres qu'elles ſe ſont déclarées.

The prize is ſix hundred livres.

Diſſertations on theſe ſubjects muſt be tranſmitted to the Society by the firſt of January 1788.

Determiner quelles ſont les maladies dont le ſyſtême des vaiſſeaux lymphatiques eſt le ſiège; c'eſt-a-dire, dans leſquelles les glandes, les vaiſſeaux lymphatiques, et le fluide qu'ils contiennent, ſont eſſentiellement affectes; quels ſont les ſymptomes qui le caracteriſent, et les indications qu'elles offrent a remplir?

The prize is ſix hundred livres.

Determiner

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Determiner par l'obſervation, quelles ſont les maladies qui reſultent des émanations des eaux ſtagnantes et des pays marecageux, ſoit pour ceux qui travaillent a leur deſſèchement, et quels ſont les moyens de les prevenir et d'y remedier?

The prize is ſix hundred livres.

Memoires on theſe two laſt ſubjects muſt be tranſmitted to the Society by the firſt of January 1789.

The Royal and Imperial Academy of Sciences and Belles Lettres at Bruſſels, have again repeated a queſtion formerly propoſed by them.

Quels ſont les moyens que la médecine et la police pouvroient employer pour prevenir les erreurs dangereuſe des enterremens precipites?

They have alſo propoſed the following queſtion:

Quels ſont les végétaux indigènes propres à fournir des huiles qu'on pourroit ſubſtituer avec ſucces et ſans danger à l'huile d'olive? Quelles ſont les methodes de prepare et de conſerver ces huiles? Enfin, quel ſera leur

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prix, en ſuppoſant un prix donné des matiers dont on les tires?

Each prize is a gold medal of the value of twenty-five ducats; and memoirs on theſe ſubjects muſt be tranſmitted to M. des Roches, Secretary of the Academy, by the 16th of June 1788.

The Royal Academy of Sciences at Paris propoſed in 1787 the following prize queſtion:

La recherche des moyens par leſquels on pourroit garantir les broyeurs de couleurs des maladies que les attaquent frequemment, et qui ſont la ſuite de leur travail."

Nothing ſufficiently explicit having been preſented on this important ſubject, the queſtion is again repeated, and a double prize offered, amounting to 2160 livres.

The diſſertations of competitors for this prize muſt be tranſmitted to the Secretary by the firſt of February 1789.

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In the fourth volume of theſe Commentaries, publiſhed about ten years ago, we mentioned a work which then made its firſt appearance, and which has ſince attracted the attention of almoſt every philoſopher in Europe. We mean the celebrated work of Mr Lavater on phyſiognomy.

This work, by means of the original German, and through the medium of the French edition, has been very much the ſubject of converſation among the Britiſh philoſophers. But it has never hitherto appeared in an Engliſh dreſs. Propoſals, however, have lately been circulated for publiſhing an Engliſh tranſlation of it by ſubſcription at London. The engravings are to be executed by Mr Thomas Holloway, and the tranſlation by the Rev. Dr Henry Hunter. It is therefore to be hoped, that the whole will be executed in ſuch a manner as to do credit to the ori-

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ginal. And if this be the caſe, it will have a juſt claim to no inconſiderable ſhare of the public attention. To give our readers ſome idea of the nature and tendency of this work, we ſhall preſent them with the following paſſage, extracted from an addreſs to the public, which the Engliſh editor has annexed to his propoſals.

"The profeſſed aim of this curious, entertaining, and inſtructive work, is to promote the knowledge and the love of mankind. The plan of it is perfectly original, and the ſubject univerſally intereſting and important. In the execution, there are inceſſantly diſcovered marks of an enlarged mind, a penetrating genius, an ardent and pious ſpirit, a warm and benevolent heart. The ſtyle of the author is elegant, correct, and perſpicuous: His figures, of which he makes abundant uſe, in general juſt, bold, and ſtriking: His ſentiments frequently noble and ſublime.

"To various deſcriptions of readers the editor flatters himſelf the tranſlation and embelliſhments of theſe ſingular eſſays will be highly acceptable. Artiſts, in all the branches of deſign, will be furniſhed with innumerable

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rable hints reſpecting the principles and improvement of their art. The philoſopher will find himſelf conducted into a new, extenſive, and uſeful field of ſpeculation. Mr Lavater's fragments, as he modeſtly calls them, afford a rich repaſt to the lovers of polite learning, who will be ſupplied with ample matter to exerciſe, to gratify, perhaps to correct their taſte. To the friend of virtue, it muſt yield heart-felt ſatisfaction to meet with another generous manly ſpirited attempt, to promote the cauſe of humanity, goodneſs, and truth: While the man of piety will rejoice in the animated and affecting views which are continually preſented of the Great Creator's power, wiſdom, and beneficence.

"The daring ſpirit of Lavater, it is acknowledged, frequently hazards a flight, which the calm and timid will be apt to tax with raſhneſs and extravagance. But the very wildneſs and excentricity of genius, pleaſe infinitely more than all the frigid laborious correctneſs of phlegm and apathy.

"Neither the author nor the editor pretend to offer this to the public as a perfect

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and finiſhed work. They are abundantly ſenſible that the ſcience of phyſiognomy is yet in its infancy: but they are confident it is a ſubject of ſucceſsful though difficult inveſtigation. The learned, acute, and enterpriſing Swiſs, has made a reſpectable beginning, and a meritorious progreſs. Why may it not be reſerved for Britiſh ingenuity, ſpirit, and perſeverance, to complete his deſign, to ſupply the materials which are ſtill wanting, to clear away what may be found ſuperfluous, and to rear the fabric to its higheſt poſſible pitch of beauty, ſolidity, grandeur, and uſefulneſs?"

It is propoſed that this work ſhall be printed in numbers, at 12s. each to ſubſcribers. It is intended that the firſt number ſhall appear on the 1ſt of January 1788; and it is computed that the whole will be compriſed in forty numbers, which will make four magnificent volumes in 4to.

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In our laſt volume we mentioned, that the College of Phyſicians in London had in contemplation the reformation of their Pharmacopœia; and it is with much ſatisfaction we can now add, that very conſiderable progreſs is made in that work. In Auguſt 1786, the Committee appointed by the College for the purpoſe of reviſing their Pharmacopœia, printed a ſketch of a future edition of that book. This was ſubmitted to the judgment both of their own members and of others; particularly of ſeveral members of the ſociety of Apothecaries. In the advertiſement prefixed to this ſketch, they requeſt that any obſervations or propoſals for the improvement of it, ſhould be tranſmitted to Mr Ker beadle of the College of Phyſicians, on or before the 18th of October 1786.

After receiving and duly conſidering all the information thus obtained, the College have

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have lately printed a ſecond ſpecimen, under the title of Pharmacopœiæ Londinenſis Specimen alterum. While the former ſpecimen might juſtly be conſidered as containing many important alterations of their preſent Pharmacopœia, which has received no reviſal ſince the year 1745, there can be no doubt that this ſecond ſpecimen appears with a very conſiderable additional number of uſeful improvements. Into any minute compariſon, however, of the two ſpecimens, we cannot here propoſe to enter. We ſhall only obſerve, that it could hardy fail to be an object with the College, to ſubſtitute, in place of the unmeaning and often abſurd names formerly employed, ſuch terms as would ſerve to convey a proper idea of the ſubſtance to which they were appropriated. Accordingly both ſpecimens begin with an Index Nominum mutatorum. In the firſt ſpecimen they propoſe a change of about fifty names; but in the ſecond ſpecimen, the number of terms propoſed to be changed amounts to near one hundred and fifty. Although theſe numerous changes may at firſt be productive of ſome inconvenience, particularly to thoſe who

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are averſe to all trouble; yet it cannot be a matter of doubt, that almoſt every one of the intended alterations will not only convey uſeful information to the apprentices of apothecaries, a claſs whom it is highly neceſſary to inſtruct; but will alſo greatly aſſiſt the memory even of the moſt learned members of the profeſſion. And by theſe alterations the language of pharmacy will be rendered much more conſiſtent with the principles of ſound chemiſtry and of common ſenſe. On this ſubject we are even inclined to think that the College might have gone ſomewhat further with advantage. Thus they have ſtill retained the name of Terra Japonica, although it be well known that the ſubſtance thus denominated is a vegetable extract, and that the earth which it too often contains is merely an accidental impurity. Accordingly, in the laſt edition of the Pharmacopœia Suecica, and in ſome other of the moſt approved modern Pharmacopœias, it has the name of Catechu vel Succus Japonicus.

But while in this ſecond ſpecimen many uſeful alterations are propoſed with reſpect to names, changes ſtill more important, re-

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ſpecting the preparation and compoſition of different articles, are propoſed in every part of the work. And it is earneſtly to be wiſhed, that the College may, without delay, give their ſanction to a work from which the practice of medicine in Britain muſt derive many advantages; and that the public may ſoon be favoured with it under the form of a new Pharmacopœia publiſhed by authority.

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A new edition, being the third, of Dr Swediaur's Practical Obſervations on Venereal Complaints, is in the preſs here, and will very ſoon be publiſhed. This edition, we are informed, will appear with many corrections and additions; and particularly, a ſupplement is to be added to it, containing a new plan for a Pharmacopœia Syphilitica. In this, not only the ſimples, but likewiſe all the preparations and compounds hitherto known to

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to be uſeful for the cure of venereal complaints, are exhibited in formulas.

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We formerly announced, that Dr Cullen had an intention of publiſhing a Treatiſe on the Materia Medica. And we are happy to be able to inform our readers, that the work is now actually in the preſs. But from the author's numerous engagements, particularly at this ſeaſon, it is hardly to be expected that it will be ready for publication for ſome months to come.

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We once flattered ourſelves, that we ſhould have been able to introduce into our liſt of new publications for this year, Mr Smellie's Philoſophy

Philoſophy of Natural Hiſtory, with a ſhort enumeration of the contents of which we preſented our readers in our laſt volume: But although the publication has been retarded longer than was expected, yet it has now made a very conſiderable progreſs, about one half of the work being printed off.

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Dr Monro's work on the Burſæ Mucoſæ in the human body is now in the preſs, and will in all probability be ready for publication by the end of the enſuing winter.

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The anatomical plates by Mr Andrew Bell, engraver to his Royal Highneſs the Prince of Wales for Scotland, have made conſiderable

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able progrefs fince we laft mentioned them. Of two hundred and forty, which it is computed will be neceffary to comprehend the whole fyftem, one hundred and fifty-three are already engraved. The firft and fecond parts of this work, comprehending the plates of the bones and mufcles, are already publifhed; and the third part, which will occupy about fixty plates, will, it is imagined, be publifhed in March next.

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A new edition of Dr Gregory's Confpectus Medicinæ Theoreticæ is almoft entirely printed off, and will probably be very foon publifhed. In this third edition, the author, we are told, has made confiderable alterations and additions.

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It is not many years fince the public were

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favoured with a valuable part of the writings of Hippocrates in an Engliſh dreſs; the hiſtory, viz. of his Epidemics, tranſlated from the original Greek by Dr Farr, a member of the Royal Society of London. We are happy in being now able to announce an Engliſh tranſlation of another valuable part of the writings of the Father of Phyſic. The Prognoſtics and Prorretics, or the Prænotiones and Prædicta, as they have in general been ſtyled, tranſlated from the original Greek of Hippocrates, with large annotations critical and explanatory, by Dr John Moffat the tranſlator of Aretæus, are now in the preſs, and will probably be ready for publication in the courſe of the enſuing winter.

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We mentioned in our laſt volume, that at the time of our annual publication, the firſt volume of the tranſactions of the Royal Society of Edinburgh was almoſt printed off:

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And not long after, the whole papers intended for the volume, falling either under the phyfical or literary clafs, were completed. But to thefe memoirs it is intended, that, after the example of the Royal Academy of Sciences at Paris, a hiftory fhall be prefixed; and the conduct of this part was committed to the fecretary of the Society. But from a long-continued illnefs to which that gentleman has been fubjected, the execution of it has been unavoidably retarded. This preliminary part, however, is now fo nearly finifhed, that we think we may with confidence fay, the publication will appear in the courfe of a few weeks.

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A correfpondent in London fends us the following account of an intended publication by Dr Denman, whofe reputation as a practitioner and teacher of midwifery has long been eftablifhed.

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"Dr Denman has iſſued propoſals for publiſhing engravings of various ſubjects, principally relating to his own profeſſion. I have ſeen ſome of them, and they are very elegantly executed, moſt of them by Riemſdyck."

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To another valuable correſpondent we are indebted for the following information reſpecting ſome foreign publications.

A publication will ſoon take place at Vienna under the title of Acta Academiæ Cæſareo-Regiæ Medico-chirurgicæ Vindobonenſis, tom. I. It will be a quarto volume, illuſtrated with ſeveral copperplates, and will contain papers on medicine, ſurgery, anatomy, &c. by Mr Brambilla ſurgeon to the Emperor, Mr Scarpa, and ſeveral other of the moſt eminent practitioners at Vienna.

Mr Landriani, profeſſor of natural philo-

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fophy at Milan, who has formerly publifhed a treatife on inflammable air, is engaged in preparing for publication a treatife, written in the French language, on heat. In this treatife a variety of new obfervations and experiments are contained.

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Some months ago an effay was publifhed at Philadelphia, on the caufes of the variety of complection and figure in the human fpecies; with ftrictures on Lord Kames's difcourfe on the original diverfity of mankind; by the Rev. Samuel Stanhope Smith, D. D. vice-prefident and profeffor of moral philofophy in the college of New Jerfey, and member of the American Philofophical Society held at Philadelphia for promoting ufeful knowledge. A new edition of that effay is at prefent in the prefs at Edinburgh. This edition will contain feveral additional obfervations and notes

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by a gentleman of the univerſity of Edinburgh.

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Mr Benjamin Smith Barton, member of the Royal Medical Society of Edinburgh, whom we have already had occaſion to mention in this volume as having gained the Harveian prize for 1786, intends ſoon to publiſh obſervations on ſome parts of natural hiſtory; to which he is to prefix an account of ſeveral remarkable veſtiges of an ancient date, which have been diſcovered in different parts of North America.

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A new edition of the Encyclopædia Britannica, or Dictionary of Arts, Sciences, and Miſcel-

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Miſcellaneous Literature, which was ſome years ago firſt publiſhed at Edinburgh, will ſoon be put to the preſs. Of a work which has met with ſo favourable a reception from the public, it is unneceſſary for us to ſay any thing. We may only obſerve, that it is now to be extended to twelve volumes in quarto, with many additional plates; and we may refer our readers who wiſh for a more full account of it, to the propoſals, which will be publiſhed in a few days.

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Dr Robert M'Cauſland, an ingenious phyſician, by whoſe obſervations former volumes of theſe Commentaries have been enriched, has a work at preſent in the preſs at Edinburgh, intitled, Conjectures on ſome Phenomena of the Barometer; to which is added, a paper on the inverſion of objects on the retina.

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Mr William Houlſton of London has iſſued propoſals for publiſhing by ſubſcription, in one volume quarto, Surgical Tracts, by the late J. O. Juſtamond, Fellow of the Royal Society, and ſurgeon to the Weſtminſter Hoſpital.

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The ſixth and laſt volume of Mr Bell's Syſtem of Surgery is now in the preſs at Edinburgh. We may therefore congratulate our readers on the proſpect there is that this valuable work will be ſpeedily completed. In this ſixth volume, as we formerly announced, the ingenious author treats of fractures, luxations, and ſeveral other important ſubjects which had not been conſidered in his former volumes.

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In the 28th volume of the Leipfic commentaries, an account is given of the opening of a new academy of furgery at Vienna. Some years ago the prefent Emperor inftituted a fchool of furgery, under the direction of the celebrated Brambilla. In this there were at firft only two profeffors; and to their charge the inftruction of an hundred and thirty young men was committed, thirty of whom had formerly been furgeons in the army. But of late the number both of the teachers and pupils has been confiderably increafed. Gabrieli has been appointed to teach pathology and practice; Boecking, anatomy, phyfiology, and phyfics; Streit, medical and pharmaceutical furgery; Hunczowfky, furgical operations, midwifery, and the chirurgia forenfis; and Plenk, chemiftry and botany. To thefe alfo has been added, Beindl, as profector and extraordinary pro-

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feffor of furgery and anatomy. Befides this, the Emperor, with his ufual liberality, has provided a large and fplendid edifice in Vienna, which affords habitation both for the teachers, the ftudents, pregnant women, patients for clinical lectures, and fervants. He has alfo purchafed for the ufe of this academy a medical library, which is open every day, a complete fet of chirurgical inftruments, an apparatus for experiments in natural philofophy, a collection of natural hiftory, a number of anatomical and pathological preparations, a collection of preparations in wax brought from Florence, and a variety of other ufeful articles. Adjoining to the building alfo there is a good botanical garden.

On the opening of the medico-chirurgical fchool, Brambilla delivered an oration to a very fplendid audience; and by order of the Emperor, prefented gold and filver medals to many of thofe who were prefent. This difcourfe has fince been publifhed, and is intitled, "Oratio J. A. Eq. A. Brambilla, habita Vindobonæ cum nova Cæfareo-regia Academia medico-chirurgica, anno 1787 die nono menfis Octorbris folemniter apperieretur." This

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oration is divided into two parts. In the firſt of theſe, the author treats of the antiquity of ſurgery; of the neceſſity of practiſing it; of its great extent; of the ſatisfaction attending it from its certainty; and laſtly, of the nobleneſs of the art, and of the high rewards and honours that have been conferred on its profeſſors. In the ſecond part of his oration, he compares the former ſtate of ſurgery in the Auſtrian provinces with its preſent condition; and from thence endeavours to infer what will be its condition hereafter. He complains of the neglect and contempt that has been ſhown for ſurgery in Germany; and ſtates the obligations which ſurgery and its profeſſors owe to Joſeph II. Among other parts of this inſtitution, three prize-medals, each of the value of forty florins, are to be annually beſtowed on thoſe ſtudents who return the beſt anſwer to queſtions propoſed the year before. Theſe prizes are not entirely founded by the Emperor, but are in part owing to the liberality of Brendellius the Protochirurgus at Vienna.

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His Serene Highneſs William Prince of Heſſe, a great patron of learning in his dominions, has lately inſtituted a new profeſſorſhip in the univerſity of Marpurg, a profeſſorſhip ſcientiæ cameralis et œconomiæ; and he has invited to that chair Dr Nathanael Godofredus Leſke, profeſſor of natural hiſtory and œconomy at Leipſic; by whom the publication of the Commentarrii de rebus in ſcientia naturali et medicina geſtis has been conducted for ſome years paſt. As Dr Leſke has accepted of this appointment, he will of courſe ſoon leave Leipſic. But although he be to change the place of his habitation, yet he has engaged to labour with his uſual induſtry in the continuation of that work. And indeed hitherto it has been conducted by learned men not merely at Leipſic, but in ſeveral different parts of Germany. From the continuance of the exertion of learned and induſtrious colleagues, Dr Leſke, who ſtill propoſes to be the editor of the Leipſic

Commentaries,

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Commentaries, hopes to render them no leſs extenſively uſeful than before. Communications, however, intended for the work, muſt now be addreſſed to him either at Marpurg; or, if it be more convenient to tranſmit them to Leipſic, they may be ſent there to the care of Jo. Godf. Muller, bookſeller.

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The Prince of Heſſe has lately made ſeveral other alterations on the univerſity of Marpurg, by appointing men of eminence to different profeſſorſhips. Among others the celebrated Dr Baldinger, formerly archiater at Caſſell, has been appointed primarius profeſſor of medicine; Drs Stein, Michaelis, Monch, Stegmann, and Bruhl, the three laſt of whom were formerly profeſſors at Caſſell, have been appointed profeſſors at Marpurg, and have gone to reſide in that city; at which we are alſo informed that a botanical garden, a chemical laboratory, and a lying-in hoſpital, have lately been eſtabliſhed.

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The Royal Society of Sciences at Copenhagen have lately elected into their number Sir Joseph Banks, president of the Royal Society of London; Peter Simon Pallas of the Peterſburgh academy; Andrew John Retzius, profeſſor of botany at Lund; and Henry Nicander, ſecretary to the Academy of Sciences at Stockholm.

The celebrated Thunberg, ſucceſſor to Linnæus as profeſſor of botany at Upſal, has been inveſted by the king of Sweden with the equeſtrian order of Vaſa.

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The celebrated Zimmerman, profeſſor at Brunſwick, was lately elected one of the ordinary members of the Imperial Academy of Peterſburgh; and it was imagined that he would remove to that city: But the Duke of

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of Brunſwick has, we are told, conferred upon him ſuch additional honours as have induced him to decline the offer made to him from Ruſſia, and to remain in Germany.

On the 31ſt of March 1786, J. H. Fiſcher, M. D. was appointed one of the profeſſors of medicine at Goettingen.

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In February laſt, on the reſignation of Dr Burges and Dr Muckleſtone, Dr Matthew Baillie and Dr George Pearſon were elected phyſicians to St George's hoſpital in London. Both theſe gentlemen have engaged with great induſtry in teaching different branches of medicine at London. Dr Baillie, who ſucceeded to his uncle, the late celebrated Dr Hunter, is conjoined with Mr Cruickſhank as teacher of anatomy in the theatre and muſeum built by Dr Hunter in Windmill-ſtreet; and Dr Pearſon, availing himſelf of the opportunity which his ſituation as an hoſpital-

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phyſician affords to him, has begun clinical lectures at that charitable eſtabliſhment. For this purpoſe he keeps an accurate regiſter of the caſes of thoſe patients who are admitted into the hoſpital; and in a few days after their admiſſion, explains, in a lecture given once or twice a-week as may be neceſſary, the nature of each caſe, and the method propoſed for treating it. And after the caſe is brought to a concluſion, remarks are offered on its progreſs and termination. It is needleſs for us to point out the benefit which an attentive ſtudent muſt derive from ſuch remarks. We may only remark, that in conſequence of ſuch a courſe of lectures, delivered with judgment and candour, the induſtrious obſerver muſt profit not only by the diſcernment and abilities of a teacher, but even by his omiſſions and errors.

Beſides the clinical lectures, Dr Pearſon delivers alſo two other courſes of lectures; the one on the practice of phyſic, the other on chemiſtry. Each of theſe courſes conſiſts of about ſixty lectures. The ſubſcription for any one of the above courſes is three guineas,

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neas, for both courfes five guineas, and as a perpetual pupil fix guineas.

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Mr John Pearfon, furgeon to the Lock Hofpital and to St Clement's Difpenfary, is at prefent engaged in delivering at London a courfe of phyfiological and chirurgical lectures. The courfe confifts of four parts: 1. Lectures introductory to the ftudy of phyfiology and pathology; 2. Phyfiology, or the doctrines of the animal œconomy; 3. Inftitutes of furgery; 4. An extenfive view of the hiftory and treatment of fcrophula, fyphilis, and gonorrhœa. The terms are, for one courfe three guineas, for two courfes fix guineas; after which gentlemen are confidered as perpetual pupils.

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Dr Ofborn of London, who has long been favourably known to the public, both as a practi-

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practitioner in midwifery, as an author, and as a lecturer, has lately taken Mr John Clarke furgeon in Chancery-lane as a partner in his lectures on the theory and practice of midwifery, and on the difeafes of women and children. The ftudents, when properly qualified, have the advantage of attending patients at the lying-in hofpital in Store-ftreet.

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We mentioned in our laft volume, that a courfe of clinical lectures on furgery had been begun in the Royal Infirmary of Edinburgh by Mr James Ruffell; and we are happy to add, that his lectures laft winter gave much fatisfaction to his hearers. He has again refumed his labours at the commencement of the prefent winter-feffion. And there can be no doubt that the undertaking will be productive of many advantages to the induftrious ftudent.

During

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During the courſe of the year 1787, Dr Samuel Spalding, Dr George Bachmetieve, and Dr Thomas Cochran, have been elected Fellows of the Royal College of Phyſicians of Edinburgh; and Dr Thomas Spens, Dr John Drummond, and Dr Patrick Baron Seton, have been admitted Licentiates of the College.

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The Royal College of Surgeons of Edinburgh have obtained an act of Parliament for making a proviſion for their widows and children, from annual payments made by each member during his life. The College, on this occaſion, have been ſo much indebted to

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the exertions of one of their number, Mr Hay, that they have presented that gentleman with an elegant piece of plate, on which is engraved the following inscription :

Viro optime de Collegio Chirurgorum Edinensium merito,
THOMÆ HAY,
Quia Viduis quæ maritos atque Liberis qui parentes amissos deflerunt
Labore indefessus consuluit,
Vas hocce argenteum, grati animi monumentum,
Publico fratrum consensu
Donatum est.
1787.

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About the beginning of the year 1785, died at Florence Xaverius Manetti, professor of medicine and botany, and director of the botanical society of that city. He is well known to the learned world as the author of several ingenious and useful works on botany and other branches of natural history.

On the 31st of July 1785, Dr Jo. Ger. König, an indefatigable botanist and natural histo-

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hiſtorian, and a correſponding member of the Academy of Sciences at Copenhagen, died at Tranquebar.

On the 5th of November of the ſame year, Philip Gueneau de Montbeillard, juſtly celebrated for his continuation of Buffon's hiſtory of birds, and ſeveral other works in natural hiſtory, died in the 65th year of his age.

On the 5th of Jan. 1786, J. Steph. Guettard, member of the Faculty of Medicine in Paris, died in that city. He held the offices of cenſor-royal and botaniſt to the Duke of Orleans. He was a celebrated mineralogiſt.

On the 6th of January, died at Madrid the celebrated Petrus Franciſcus Davila, chief director of the muſeum of the king of Spain, a member of ſeveral learned ſocieties, and a phyſician of great eminence.

On the 5th of March, died at Berlin the celebrated Schmucher, ſurgeon to the king of Pruſſia, and director of his military hoſpitals.

On the 19th of April, M. J. N. Moreau of the Royal Academy of Surgery in Paris, and chief ſurgeon to the Hotel-Dieu, died in that city.

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Dr H. Maret, phyſician at Dijon, one of the members of the academy there, and of ſeveral other learned ſocieties, died on the 11th of June, in the 59th year of his age.

In the month of September, the celebrated Gleditſch, a member of the Academy of Sciences at Berlin, died in that city, in the 73d year of his age.

And in the courſe of the ſame year, the illuſtrious C. G. Scheele, juſtly celebrated over all Europe for his chemical writings, died at Stockholm.

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The following deaths of men diſtinguiſhed for their abilities in medicine or philoſophy have taken place during the courſe of the year 1787.

Feb. 13. The Abbé Boſcovich, juſtly celebrated over all Europe by his philoſophical publications. He had arrived at the 77th year of his age.

March

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March 18. Dr John Rotheram, phyſician in Newcaſtle, in the 68th year of his age. He had for a long time, with great credit to himſelf and benefit to the public, acted as phyſician both to the infirmary and alſo to the lying-in hoſpital at Newcaſtle.

Sir William Watſon, an eminent phyſician in London, and vice-preſident of the Royal Society. In a future volume, we hope to be able to preſent our readers with ſome authentic memoirs of this learned and reſpectable phyſician.

July 4. Sir Richard Jebb, Bart. He was born at Stratford in Eſſex, a few miles from London, where his father practiſed as a phyſician. He had a liberal claſſical and philoſophical education at Oxford; but being by principle a Nonjuror from his father, he could not be matriculated, nor take any degree, at that Univerſity. He afterwards ſtudied medicine in London and in Leyden; and from the Univerſity in the latter of theſe cities, he obtained the degree of Doctor of Medicine. Upon ſettling in London, he entered as a Licentiate of the College of Phyſicians; and in the year 1768, he was elected a Fellow of that reſpectable body.

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body. He was for ſome time phyſician both to St George's Hoſpital and to the Weſtminſter-Infirmary. As a practitioner, his eminence became ſo great, that when the Duke of Glouceſter fell dangerouſly ill in Italy, he was requeſted to go abroad to attend to the health of that Prince. And on this occaſion, his conduct gave ſo much ſatisfaction, that he was called abroad a ſecond time to viſit the ſame prince on a future illneſs in 1777. He was made phyſician-extraordinary to the king about the time of his ſecond journey to the continent on account of the Duke of Glouceſter; and in 1780 he was appointed phyſician in ordinary to the Prince of Wales. He not only held theſe offices about the royal family, but was for ſeveral years one of the phyſicians chiefly employed there, and in whoſe judgment great confidence was placed. Upon the death of Sir Edward Wilmot in November 1786, he was appointed one of the phyſicians in ordinary to his Majeſty, as we had occaſion to mention in our laſt volume. But this office he did not enjoy for many months. He died in the 58th year of his age; and the immediate cauſe of his laſt ill-

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neſs was ſuppoſed to be fatigue and anxiety in attendance on two of the princeſſes during the meaſles. He was ſuddenly attacked with a fever in their apartments at Windſor, and fell a victim to the diſeaſe after a few days illneſs.

July 9. Dr William Irvine, lecturer on chemiſtry and materia medica in the Univerſity of Glaſgow.

We hope the following account of this ingenious gentleman, with which we have been favoured by a worthy correſpondent, will not be diſagreeable to our readers.

Dr Irvine was the ſon of a reſpectable merchant in Glaſgow. Having ſpent the uſual time at a grammar-ſchool of that place, in the year 1756 he began to ſtudy at the Univerſity, where he learned the languages with facility, and ſpeedily acquired a general knowledge of the ſciences. His genius led him very early to mathematical reſearches, which he continued to proſecute with great induſtry and ſucceſs. However, he made choice of medicine as a profeſſion; and after taking his degree in Glaſgow, he went to London and Paris, where he ſtudied moſt atten-

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attentively every thing connected with his profession.

In 1766, the chemical chair becoming vacant, Dr Irvine was a candidate. Nobody doubted his abilities as a chemist; and in teaching botany for several years, he had given ample specimens of his talents as a lecturer: But another gentleman, who has since distinguished himself in various departments of science, having stronger interest, was preferred. Mortified at this disappointment, Dr Irvine at first resolved to quit his native city; but some members of the University were sorry to lose one whose bright dawn promised a splendid noon. The venerable Dr Reid, in particular, interested himself so warmly, that a new lectureship was instituted, with a salary equal to that annexed to the chemical chair. For several years Dr Irvine taught materia medica with great applause, though his pupils were few and his emoluments scanty. About the year 1769 or 1770, the chemical chair having again become vacant, he was appointed lecturer both in chemistry and materia medica.

In all his lectures, Dr Irvine displayed profound

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found erudition, as might be expected from a man of genius, who had conſtant acceſs to an extenſive library, and who had devoted his time from his youth to literature and ſcience. He did not content himſelf, however, with retailing the opinions of other men. He thought for himſelf; and he was eminently qualified to do ſo, both by a great ſhare of natural ſagacity, and by an intimate acquaintance with the mathematical manner of reaſoning. He marked with preciſion the limits between the fictions of theory and the facts aſcertained by experiment. But he was not a mere operator, the drudge of ſcience, who continues to pile up fact upon fact, without eſtabliſhing any principle, without deducing any concluſion. His experiments were ſimple, his inferences accurate; whence he ſtruck out new lights, reſpecting not only the beſt mode of conducting chemical proceſſes, but alſo reſpecting ſome of the ſublimeſt doctrines of chemiſtry. Of his particular diſcoveries, however, I can give no detail. This ſhall be done in a future volume, if any authentic account of them can be procured.

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As far as I can learn, Dr Irvine publiſhed nothing. His lectures were written on detached papers, and he added innumerable illuſtrations ſuggeſted at the moment. His language was ſimple and correct in a high degree; and the ſingular preciſion of his terms, together with the accuracy of his arrangement, enabled him, with uncommon ſucceſs, to unfold the moſt intricate ſubjects. I am informed he has left ſome intereſting manuſcripts; which, in the opinion of the beſt judges, fully juſtify the encomium now beſtowed.

Dr Irvine, though profoundly ſkilled in every department of phyſic, never was engaged in extenſive practice, owing partly to his early predilection for ſcience, chiefly to his manner. Diſregarding the prejudice and vanity of men, he neither ſoothed the one nor flattered the other. He ſpoke what he thought true, he did what he thought right, without troubling himſelf about the conſequence. If any additional proof were needed to ſhow how little the moſt extenſive information and the moſt ſolid abilities could avail in the practice of phyſic, unleſs they are varniſhed

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over with gaiety or complaifance, and aided occafionally by fupplenefs, artifice, and adulation, an affected dignity of referve to fome, and a fycophantic compliance with others, this gentleman's cafe might be quoted anew. Men always were, and always will be, niggardly to thofe who prefume to claim their favour as a right; but they beftow it with a lavifh hand on fuch as condefcend to requeft it, with the cringing fervility of an Afiatic.

Dr Irvine's exemption from practice, tho' adverfe to his private fortune, had one good effect; it enabled him to devote much of his time to the manufactures of his native city. Since the beginning of the American war thefe have increafed exceedingly; and the progrefs of many, efpecially of thofe connected with chemiftry, was haftened by the judicious experiments and obfervations of this gentleman, who inftructed the manufacturers with the utmoft franknefs and patience. Of late he had a direct concern with a very confiderable company employed in manufacturing glafs; and he fpent much of his time in contriving the furnaces, and regulating the proceffes, fo as to produce the greateft quan-

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tity of work at the leaſt expence. He was buſy with this favourite ſcheme, which ſeemed to thrive under his management, when about the end of June he was ſeized with the fatal fever. The ſymptoms were from the firſt unpromiſing; and on the eleventh day of the diſeaſe, he expired, leaving a widow and one ſon.

His intimate friends regret his loſs; becauſe they knew and eſteemed his worth. Many of his fellow-citizens alſo regret his loſs, though from different motives. He was uſeful to them; he ſolved their doubts; he corrected their errors; he pointed out many improvements, in conſequence of which they ſaved money. Yet it was doubtful how long they might have enjoyed the benefit of his inſtruction, even if his life had been prolonged. He felt his genius cramped in a ſphere too narrow for its exertion; and it is believed that at times he thought of imitating his friend Mr Watt, who tried in vain to procure adequate encouragement in Glaſgow.

Laſt ſeaſon Count Luzuriaga, who was ſent to Britain at the expence of the Spaniſh government, viſited Glaſgow, and ſaw Dr

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Irvine ſeveral times. He mentioned him to the Spaniſh miniſters; who empowered him to make the following propoſal to Dr Irvine: On condition that he would leave Glaſgow, he ſhould be fully indemnified, both for what he gave up at preſent, and for what he had the proſpect of acquiring hereafter. For ſome years he muſt have remained in Old Spain for the purpoſe of being naturalized; and during that term, ſome manufactures, particularly one of ſalt, and another of glaſs, were to have been conducted by him. As ſoon as he was naturalized, he was to go to South America, to ſuperintend the mines, with a ſalary equal to his abilities, and the importance of the truſt committed to him. Whether he might have found it convenient to transfer his ſervices to the enemies of his country or not, it is needleſs now to inquire. The overture was verbal, and he was on his death-bed before it arrived. He died in the 44th year of his age.

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The following is the general reſult of obſervations made at the diſtance of about a mile from the city of Edinburgh, on the ſtate of the thermometer and barometer, and on the quantity of rain which has fallen during the firſt ſix months of the year 1787:

Months.	Thermometer.			Barometer.			Rain.
	High.	Low.	Med.	High.	Low.	Med.	
Jan.	48	24	36.7	30.37	29.02	29.89	0.11
Feb.	59	28	40.5	30.63	28.4	29.3	1.08
Mar.	48	30	39.3	30.62	28.65	29.40	2.19
April	56	38	46.8	30.4	28.72	29.85	1.48
May	69	43	53.9	30.75	28.92	29.79	4.73
June	72	46	58.0	30.17	29.30	29.67	3.22

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On Condenſation being the only Cauſe of Heat in Nature.

Dr Webſter of Edinburgh, in his chemical lectures, has, for ſeveral years paſt, delivered an

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an opinion on the Cause of Heat, which we have met with nowhere else; and as holding a number of facts together, we give the following sketch of it.

He considers heat, whose general effects are calefaction, rarefaction, and ignition, to be the most subtile fluid known; existing in all other kinds of matter according to their peculiar capacities and states; circulating among them according to various circumstances, as their difference in capacity, temperature, vicinity, conducting power, extent of surface, and density; and universally showing, like the electric fluid, a tendency to an equilibrium. Though it exists in every substance, it becomes perceptible and produces its general effects only when accumulated, or when, like water in a sponge, it is squeezed out by a mechanical or chemical approximation of the particles containing or attracting it. This approximation may take place with an enlargement of bulk on the whole, owing to the particular arrangement of parcels of these approximated particles and their interstices, as in the consolidation of liquid. In showing that this condensation is the only

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caufe of heat, he reviews all its obvious fources; and obferves that it is produced;

1. By the condenfation of vapour into liquid, or of either of thefe into a folid; and that it is abforbed, and cold produced, by the rarefaction of a folid into liquid, or of either into vapour. Ice becoming water, abforbs 140 deg.; boiling water becoming vapour, abforbs 800 deg. of heat; which is imperceptible, till on condenfation the fame quantity is given out, making allowance in the former cafe for the increafed capacity of the feparated air. Such fubftances as wax, thickened oil, &c. even in foftening, and as camphor, &c. in evaporating, likewife abforb heat.

Air, in parting with its water in form of hoar-froft, and abforbing heat, may have its capacity increafed fimilar to what feems fometimes to happen in a liquid parting with its precipitate.

2. Heat is produced by mechanical condenfation of air; as in an air-gun; as condenfed and blown through bellows on the bulb of a thermometer; as through a blow-pipe, which condenfation may compenfate the violence of the current carrying off the heat; as conden-

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fed by a ball in its motion through the air; as condenfed next the earth; and it is abforbed by air rarified, as on heights, or as in an air-pump.

3. Heat is produced by collifion, as by flint and fteel, the force and hardnefs being fuch as to excite a heat which inflames the particle of fteel ftruck off, or by percuffion, as in hammering a piece of metal, if part of a large mafs, or if it meet with refiftance; by repeated ftrokes it hardens, breaks rather than yields, and its particles muft be feparated by heat before it allow of approximation again. To this heat metals feem to owe their malleability, to its extrication by fudden cooling, their brittlenefs, and to this feeming faturation of heat, taken with their denfity and fmall expanfibility by heat, they may owe their fuperior conducting power of additional heat. In condenfing rare folids, the air forced out may carry off the heat.

4. Heat is caufed by friction. No heat is produced by the agitation of liquids, except in the inftant of change in fuch as are difpofed to confolidation; as in the churning of milk, water impregnated with a falt, or wa-

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ter cooled below the freezing point: Nor by the friction of solids, if liquid be interposed, because liquids are hardly condensable by mechanical means. In the chemical condensation of heterogeneous liquids, the particles may produce heat by their collisive attraction.

5. Heat is produced by the sun's rays. They do not heat transparent bodies. Hence in the higher regions of the air, there is great cold, as experienced in balloons, hence hail-showers in hot weather, and snow on mountains under the line. They burn an opaque body by a speculum or lens, without heating either much, or the air or water in which it is placed. They give out their heat in proportion to the quantity that falls; their falling directly, as in summer, though the earth be farther from the sun; their convergence; their being often reflected, as in valleys; the roughness of the surface receiving them; the density of the air as near the earth; their being absorbed, chemically condensed, or concentrated by reflection, or refraction, and resisted; so that they seem to be a substance, which, in circumstances of condensa-

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tion, have a greater tendency to give out their heat than other kinds of matter. Hence the proximate planets may not, nor even the ſun itſelf, be the hotteſt parts of the ſyſtem. The rays from the moon being 300,000 times leſs denſe, give out no perceptible heat; and rays in a certain ſtate, as reflected from the clouds and ſky, ſeem, from ſome experiments, to abſorb heat.

6. Chemical union, in its own nature, implies an approximation of particles; and always produces, or has a tendency to produce heat, unleſs counteracted by liquefaction or evaporation taking place, as diminution of bulk ſometimes is by the temporary heat. The condenſation and heat ſeem to be in proportion to the force of attraction. One part of ſpirit of wine unites chemically with two of water, and the mixture is diminiſhed one-twentieth of the bulk of the ſpirit. Ten parts of vitriolic acid unite with forty of water, and ſhrink one-fifth of the bulk of the acid. In both caſes the condenſation and heat are greater than in any other proportion, and in the latter, from the great attraction, than in the mixture of any other liquid with water.

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The heat given out by vitriolic acid, uniting and consolidating with bone-ash, is very great. The force of chemical attraction is sometimes such, that heat is produced notwithstanding the liquefaction, as in the solution of the deliquescent salts, or the evaporation, as in a multitude of cases. Where the attraction is less, as in the case of non-deliquescent salts with snow, heat is absorbed. In the case of an air, as aërial acid with water; or of two airs, as this or muriatic air, with alcaline air, uniting and consolidating, various circumstances, as the small quantity of matter in the ingredients, their little attraction, the enlarged capacity of the compound, the superior absorbency of the mercury to the glass, may vary the quantity of heat given out. In the union, however, of muriatic or alkaline air with water, of nitrous with pure air, of dephlogisticated muriatic acid with inflammable air in decomposing volatile alkali, and in other such cases, the heat is considerable.

7. Under chemical union, Dr Webster includes the heat of inflammation, electricity, fermentation, and animals. In inflammation there

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there feem to be two unions, which, even feparately, are, by the force of the attraction, powerful caufes of heat,—the union of phlogifton with pure air, and pure air with at leaft the denfer inflammables and metals. From vegetables owing their inflammability entirely to the fun; from animals living on vegetables, or on animals which live on vegetables; from mineral inflammables being of animal or vegetable origin; from the other kinds of matter in the bowels of the earth being in general in an uninflammable ftate; from the rays reviving metals, and from the electricity of the air being greater by day than by night, in warm regions and weather, than in cold—he confiders the great fource of phlogifton and electricity to be the fun.

8. The heat of electricity, he confiders to be that of flame, as it fires fpirits, and a mixture of inflammable and pure air, which flame only can do. From its producing the fame explofive effects with pure air, leaving the fame refiduum, having a fimilar fmell, and, like it, reviving metals, he confiders it, inflammable air and phlogifton as analogous,

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if not identical. And as inflammable and pure air with heat produce water, he thinks theſe may be the elementary ſubſtances of nature. Thus vegetables grow by water and the ſolar rays; animals live on them; animals and vegetables contain, and are ſpontaneouſly, or by fire, reſolved into all the different kinds of matter known; ſo that theſe inviſible fluids may be the chief, if not the only conſtituents of all the varieties of matter: and thus ſome idea may be formed of that decay and renovation continually going on in the œconomy of nature.

9. On the heat of fermentation, he obſerves, matter cannot be eſſentially altered but by an union or a ſeparation of ingredients. Any heat therefore generated in fermentation, may be owing to the union of what the maſs parts with to the air, or attracts from it.

10. On the heat of animals, he obſerves, that in digeſtion, a temporary cold may happen from the attenuation of the aliment and the extrication of air; but that in the formation of chyle, blood, ſecreted matters, and the ſolid parts, there is a condenſation of air, vapour, and liquid going on as cauſes of heat;

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that in a warm temperature the animal body being ſpongy, admits heat with difficulty, and the more ſo from the perſpiration, a cooling cauſe; whereas in cold, it parts with its heat ſlowly, and the cooling cauſe is leſs. As the principle of life in animals, and even in vegetables, reſiſts the tendency to fermentation, and in the former reſiſts the action of the gaſtric juice, ſo it does heat and cold, preſerving in great extremes, nearly a medium, between 25 deg. at which the ſerum of the blood freezes, and 156 deg. at which it coagulates. In the more perfect animals, this ſeems connected with reſpiration; and if in cold more phlogiſton is given out by the lungs, and in heat leſs, as appears by experiments, the neceſſities of the ſyſtem may be thus uniformly ſupplied, on the principle of heat being generated by chemical union.

Dr Webſter thinks the cold felt in vegetables on a hot wall, may be owing to the increaſed capacity of the pure air which they ſeparate and their perſpiration more than compenſating the heat from their union with what they abſorb from the ſun's rays, and from the water which they decompoſe.

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A language capable of compofition and decompofition, is peculiarly defirable in chemiftry. Various attempts have been made in different periods of the fcience. A complete nomenclature, indeed, cannot be expected till the different kinds of matter be analyfed, the elementary fubftances known, and a juft theory eftablifhed. The convenience of Dr Webfter's method will appear from the following fpecimen: He denominates the compound falts, Acidated alkalies, earths, and metals, and where phlogifton enters, Phlogifto-acidated ; thus denoting the ingredients of their compofition. Thofe in which there is an excefs of acid, he calls Superacidated ; thofe in which there is a defect, Subacidated ; and the precipitates from the acids, he calls Deacidated. He retains the common names of the acids, denoting

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ting one ſource of each ; and applies this generic method to the particular compounds, and to the precipitates, thus : ſuper, ſub, de vitriolated, nitrated, muriated, nitromuriated, denoting thoſe of aqua regia ; fluorated, arſenicated, boraxated, ſacchariſed, tartariſed, oxaliſed, benzoiſed, ſuccinated, ſaccharolactiſed, acetiſed, lactiſed, formicated, unguiniſed, phoſphorated, cæruliſed, denoting thoſe of the acid of Pruſſian blue ; cretiſed thoſe of the cretaceous acid ; camphoriſed, molybdiſed, &c.

The preparation from acid and alcohol, called Aether, he calls *acidocol*, as *vitriocol*, *nitrocol*, &c. ; the dulcified ſpirits, *coliſed* acids or alkali ; the eſſences, *coliſed* oils ; tinctures, *coliſed* or *aquacoliſed ;* infuſions, *aquated ;* reſinous extracts, *decoliſed ;* gummy reſins, *deaquacoliſed* ; gummy extracts, *deaquated ſubſtances ;* the compounds of ſulphur, *ſulphurated ;* liver of ſulphur, *ſulphurcali ;* its air, *ſulphurcaline* air ; deliqueſcent, *aqueſcent ;* effloreſcent, *deaqueſcent ;* decrepitating, *ſubaquated ;* deflagrating, *deaëreſcent ;* ſubject to watery fuſion, *ſoluble by heat in its own water ;* chemical attraction or affinity, or even the ſcience itſelf, *uneſcence.*

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SECT. IV.

Lift of New Books.

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